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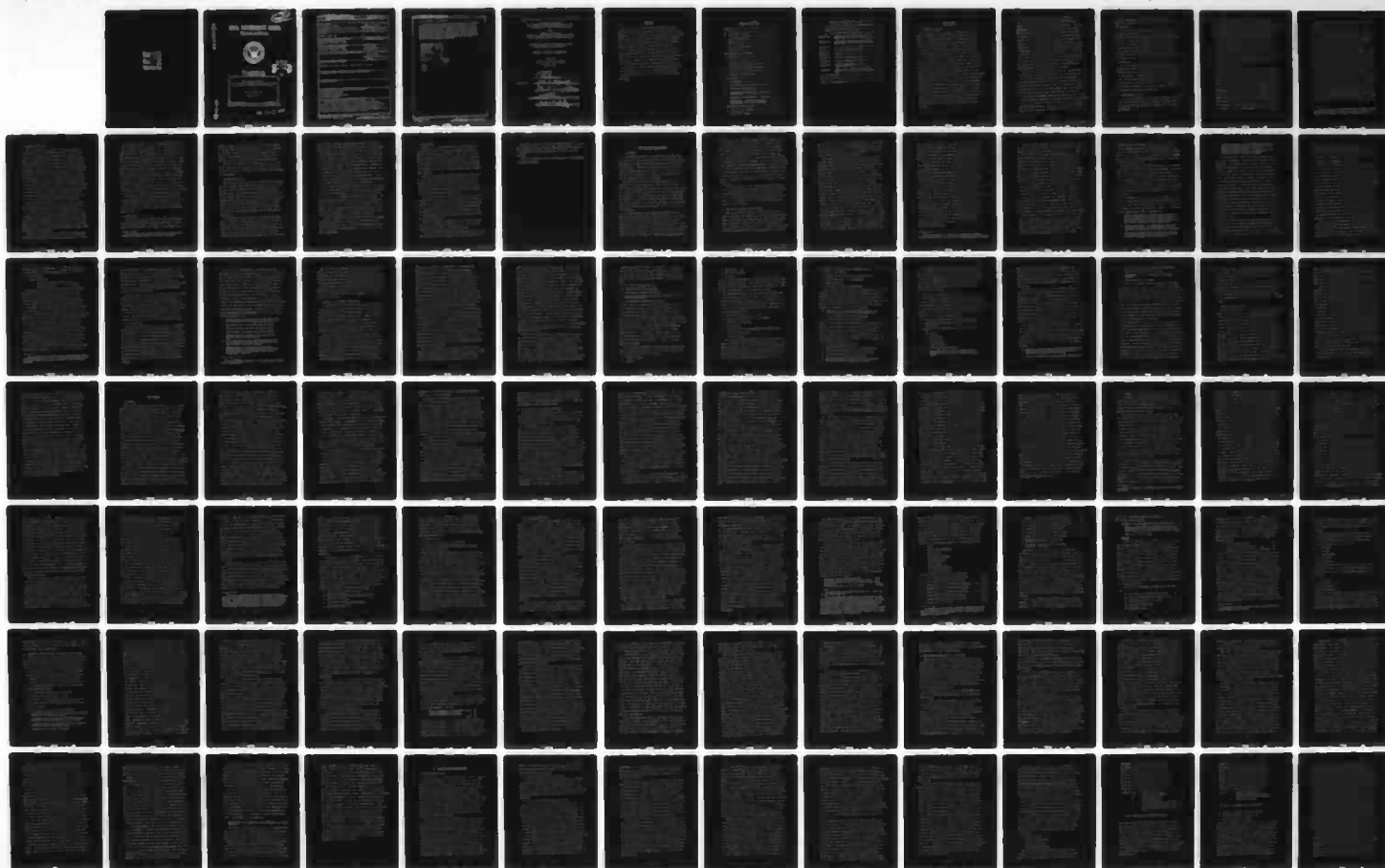
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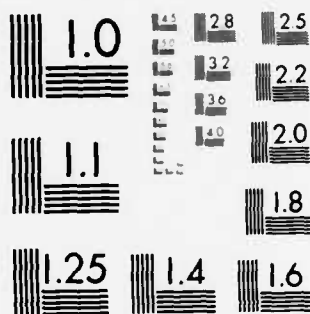
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"THE FIFTH VARIABLE"
THE PROBLEM OF MANAGING DELINQUENCY IN THE
PROCUREMENT OF STOCK AND IN-USE ITEMS

by

Robert Eugene Lee

March 1983

Thesis Advisor:

J. Bergquist

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"The Fifth Variable"
The Problem of Managing Delinquency in the
Procurement of Stock and In-Use Items

by

Robert Eugene Lee
Lieutenant, Supply Corps, United States Navy
B.A., State University of New York, 1975

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

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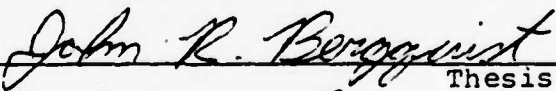
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ABSTRACT

Delinquency on the part of Navy contractors plays an important role in exacerbating the shortage of repair parts needed to support the fleet. Nearly one quarter of all stock and in-use item contracts can be classified as delinquent. SPCC, in its role as a weapons system life cycle manager, faces a complex, and very real delinquency problem.

The objective of this research effort, is to explore those factors associated with the procurement of stock and in-use items, that contribute most to the problem of managing delinquency. Emphasis is placed on environmental factors and the problems of managing a procurement organization as a public entity. Problem-solving strategies are analyzed and discussed as are contractual and extra-contractual considerations that may help to mitigate the delinquency problem.

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I. INTRODUCTION

A. THE PROBLEM OVERVIEW

The classic equation that provides the objectives from which procurement in the Department of Defense (DOD) proceeds, is comprised of essentially five variables each of which in its own right has a material effect on the complexion of the desired outcome. Stated in its proper form, the equation provides that the procurement function should acquire materials and/or services of the right quality, in the right quantity, at the right price, from the right source, and at the right time. In industry, firms are generally aware of and have the tools to substantially control or moderate the degree of change any one or more of the variables may encounter over the course of a procurement cycle. In DOD, however, because of mitigating elements such as Congressionally imposed direction in the form of law, policy and regulation established to protect the public interest, socio-economic considerations, procedural limitations, lack of sufficient planning, the changing face of national defense and more, the procurement function finds itself severely limited in its own ability to control and sometimes to even affect the often significant degree to which any one of the variables may deviate from its anticipated norm in promoting the desired outcome.

Notwithstanding the importance of each variable in the equation, it is this study's intent to focus on the last and perhaps the most critical of all the variables ... at the right time. This element has two meanings but infers only one conclusion. We may understand it to mean that the item in question should be procured at a time sufficient enough to allow for delivery (production, inspection and shipment considered) at a predetermined point in time. Conversely we may understand it to mean simply, that the item in question should be delivered at the time desired by the consumer. Whichever viewpoint is chosen, the conclusion is the same, ... "at the right time" means, the item, allowing for accepted contractor lead time all factors considered, should be available to the consumer at the point in time selected by the consumer as being necessary to the fulfillment of its needs.

Controlling the "fifth variable," that is, ensuring that the supplies arrive at the designated site on time has proven to be elusive to managers of many current DOD contracts. It has been estimated that DOD wide, "one contract in four has not met its delivery schedule," [Ref. 1]. Further, of those contracts which have in fact been deemed "late" over eighty percent were more than ninety days overdue. In a multi-billion dollar procurement environment subject to often suffocating perusal by Congress and the public at large, an aggregate failure to deliver or to have delivered, billions of dollars of goods under contract, opens up a Pandora's Box of point-counter-point, criticism and review by those who would seek

to further constrain the DOD procurement element in its ability to effectively and efficiently meet its mission requirements.

There are many factors associated with the current state of affairs relevant to the issue of late deliveries. The changing face of national defense brings with it many unique, dynamic and often "hard" demands which foster a need for flexible and creative response. This type of response is often difficult to obtain because the gamut of tools available to the procurement community, conceived to provide for just this type of response, tend to be unwieldy, pacific and ineffectual because of legal, workload or statutory considerations.

It is the purpose of this thesis to explore, discuss and analyze the problem of late deliveries under DOD contract. Questions pertaining to why the problem exists, causal factors, how the problem is managed, the effects of externalities and more will be presented and discussed throughout. Focus will be directed to a particular segment of the DOD procurement environment in addition to providing primary concentration on the problem of managing delinquencies.

B. DELINQUENCY DEFINED

Prior to engaging the subject matter herein, it would do well to make a clear distinction between contracts that are currently suffering some manner of delay and those which are delinquent.

Contracts experiencing some form of delay are not necessarily delinquent in that the delay may be considered excusable. To be excusable a delay must meet three general requirements. First, the delay must arise from unforeseeable causes. The underlying concern here is that the contractor must have no knowledge of, nor reason to know of, causes or events contributory to delay, prior to bidding. Second, to be excusable the event must be beyond the control of the contractor. The second requirement presumes that the contractor could not have prevented the occurrence of the event nor could he have performed in spite of the occurrence. Finally, the delay must also be without the fault or negligence of the contractor. Fault or negligence refers to acts or omissions by the contractor which cause delay.

Reasons for excusable delays are legion. The principal purpose of such are to protect the contractor from sanctions for late performance. Under the canopy of the excusable delay the contractor is protected from termination proceedings, damages (either actual or liquidated), procurement costs and so on. Examples of delays generally considered to be excusable are: Acts of God, Weather, Government or Sovereign Acts, Fire, Freight Embargo and others. Examples of the most common (Government Acts), would be: data delays, specification changes, slow response to requests for waivers and so on. The Government, subsequent to the delay, generally modifies the contract to extend the applicable delivery date. Although

the required items have been "delayed," they are not "delinquent."

Of course not every fire, or Government Act or freight embargo is considered an excusable delay. "Whether or not a delay is viewed as excusable will depend on the language of the contract in question," [Ref. 2]. In the Department of Defense (DOD), the Default Clause, paragraph (c), governs excusable delays in fixed price supply contracts.

To describe delinquency, Webster uses the phrase "conduct that is out of accord with accepted behavior or the law," [Ref. 3]. Since the law recognizes performance in accordance with the terms of a contract as a duty, it stands that non-delivery for which there is no bonafide (accepted) excuse, is conduct out of accord with the law, hence delinquent:¹

Subcontractor difficulties, financial problems, lack of facilities and equipment, lack of materials, poor planning and so on are examples of causes of delays which are foreseeable, within the contractor's general ability to control and/or are reflections of some fault or negligence on the part of the contractor and hence considered non-excusable. Therefore, as aptly quoted in Administration of Government Contracts, "the contractor bears the risk of both time and cost for delays which he causes or which are within his control," [Ref. 4].

¹DAR (8:25-101.3) defines delinquency as actual failure to meet delivery schedule or potential failure to meet the schedule due to failure to maintain adequate progress.

C. RESEARCH PERSPECTIVE

There are many unique considerations attributable to the various "houses" of procurement within DOD. To avoid conflict in consistency in review which may be created by arbitrarily combining peculiar procedural or industry practices under the auspices of a single study of the fifth variable, it has been determined that a segmentation of the procurement environment is necessary. This thesis, because of experience and familiarity, will be primarily concerned with a study of procurement within the Navy. The Navy procurement environment may be segmented in many ways, however, the most meaningful division from the standpoint of procedural, industrial (market) and environmental peculiarities would be as follows: systems acquisition (ships, weapons systems, aircraft); commodity procurement (industrial machinery, services, ADPE); and stock and in-use item procurement (consumables, repair parts).

Each procurement segment is, in and of itself, more than a worthy subject for a comprehensive study of late deliveries. This study has chosen the area of procurement of stock and in-use items as its focal point. The logical choice for concentration of review and analysis when dealing with any issue surrounding the procurement of stock and in-use items in the Navy, and the source selected by this study to be its primary discussion base, is the Naval Ships Parts Control Center (SPCC), Mechanicsburg, Pennsylvania.

Because of the differences in approach to the management of "delayed" deliveries as opposed to "delinquent" deliveries

(see Introduction; Section B), the causes, effects, responses to and critical nature surrounding each, this thesis will provide primary (although not exclusive) coverage of delinquent deliveries. This has been done for two reasons. First, delinquent deliveries form the bulk (greater than 80%) of the body of late deliveries experienced by SPCC.¹ Second, delinquent deliveries are those which are the fault of the prime contractor and no other. They are, therefore, of greater import because the tools available to the Government to deal with them are more "whole" and hence more effective because of the absence of Government fault. Delays, to which the Government is a party either via intent or neglect are more a matter of coordination, pre-planning and careful administration and are less clear cut as to responsibility. Consideration of "delays" will, however, not be absent from this study.

To summarize then, this study will focus primarily on a review and analysis of the problem of delinquent deliveries in the procurement of stock and in-use items performed by the Naval Ships Parts Control Center (SPCC), Mechanicsburg, Pennsylvania.

D. ASSUMPTIONS

This study assumes the reader has a working knowledge of DOD procurement procedures especially those that relate to contract administration. No attempt has been made in this

¹Percentage data obtained via review of DD Forms 1654, statistical sampling records review and interviews.

study to analyze or discuss in detail the various remedies available, such as Termination for Convenience, Termination for Default, Changes, Inspection, etc. Where reference is made to these remedies it will be done in such a way as to present a point or expand upon some other consideration.

The basics of contract law, responsibilities of the parties, agency law, and the underlying operation of the DOD-industry procurement interface, are assumed to be understood by the reader.

E. RESEARCH METHODOLOGY

An extensive review of relevant literature was conducted to gain a current and historical perspective on the instant subject. Various sources such as the Naval Postgraduate School Library, the Defense Logistics Studies Information Exchange (DLSIE), Federal Legal Information through Electronics (FLITE) system, the Air Force Business Research Management Center, the Defense Systems Management College, current textual matter and various other publications both publicly and privately developed were helpful in the formulation of perspective.

To complement and add depth and current personal experience to the body of printed matter considered, an on site review and analysis of the procurement function at SPCC, was performed. This review and analysis included personal interviews, records reviews, statistical sampling (informal), literature review (including procedures, policies and relevant

regulations), informal conversations, records flow review and more. Flexibility was stressed throughout the review period. Pre-developed, pre-tested review questions were considered inappropriate for the conduct of personal interviews because of their tendency to focus the individual on a narrow realm of consideration and open the floor to personal bias and distortions based on single subject concentration. Instead, the interviews were informal, using a broad-stroke approach touching on many work related subjects moving in and out of consideration of the problem subject to preclude focus. With more senior management personnel, the questions and conversations tended toward the more formal and structured.

To contrast and compare data gathered at SPCC with that of a similar organization outside the public sector, a comparable on site review was conducted at a major central California corporation heavily engaged in defense-related business. This firm was selected because of the scale of its contracts and the high level of stock and in-use item procurement needed to support them. The review and analysis conducted on site was similar in all respects to that accomplished at SPCC, albeit with less concentration on non-management personnel.

Finally, information thus obtained was analyzed, compared, contrasted and molded to present a cogent picture of the existing environment, forces, effects and considerations relevant to the problem of delinquency in the procurement of stock and in-use items.

F. ORGANIZATION

Critical to an understanding of the study problem, is an understanding of the existing procurement environment. Chapter II follows the Introduction, with a review of the current management environment, beginning with an overview, then focusing on a specific management element. Consideration is also given to the characteristics of work performed and a summary of how the environment affects the way management responds.

Chapter III discusses the problem itself from many points of view. Why the problem exists, its elements, scope and characteristics are all considered in this chapter, as are managements' concerns and limits. The chapter concludes by tying in what was learned about the environment in Chapter II with the insight gained in Chapter III.

An analysis and review of what is being done and what can or should be done to deal with the problem, is presented in Chapter IV. The chapter follows a sequential approach from the earliest (planning) stage to the post-award management and administration phase allowing for consideration of the various management techniques required at particular "gates" in the procurement cycle.

Chapter V presents a personal view, on the part of the author, as to the sense of proportion that should be exercised when dealing with the problem in general.

The final chapter summarizes conclusions drawn via review and analysis of all data gathered and presents them as an aid

to the reader to provide for a clear understanding of material presented throughout the study. Recommendations are offered to management for their consideration in dealing with the problem.

Relevant exhibits, a list of references and a bibliography follow the chapters.

II. THE MANAGEMENT ENVIRONMENT

A. INTRODUCTION

In the preceding chapter, the reader was provided with a very broad overview of the delinquency problem and was briefly acquainted with some of the considerations associated with its management. It would be inappropriate to move directly into an in-depth study of the problem (a task that will be accomplished in Chapter III), without first establishing a point of reference from which to embark.

Everyone would agree that management problems are not created in a vacuum. They are, in fact, functions of an environment surrounding some process or structure or the result of interactive commerce that gives rise to conflicting ideals or provides for a divergence of pursued goals and objectives. To understand a particular management problem, in this case, delinquency, one must first be well grounded in the essentials of the environment in which it exists. This is the purpose of Chapter II.

The chapter begins with a detailed examination of the process--the mission of SPCC. This comprehensive review provides the reader with an understanding of the duties and responsibilities of SPCC as an inventory control point. More importantly, the discussion centers on SPCC's role as a weapons system life cycle manager, setting the stage for a later discussion of why this process is conducive to problem formulation.

The following section deals with the structure (organization) of SPCC's Contracting Department. This is important from the standpoint that organization structure is a reflection of management's recognition of and response to its environment (a topic discussed in detail in Chapter III). Chapter II concludes with an illustration of the workload faced at SPCC, in the Contract Management Division. This topic is significant when considering problem management because it directly affects the level of resources that can be devoted to problem-solving. As a consequence, management's strategy will be greatly influenced by the characteristics of the work faced by their personnel. Elements of this topic will be discussed in subsequent chapters.

In summary, Chapter II is a transition chapter designed to act as a backdrop for the reader's consideration when seeking to gain perspective on the genesis of the delinquency problem. The chapter also serves to add substance to critical analysis of the components of the delinquency problem, performed in later chapters.

B. SPCC AS AN INVENTORY CONTROL POINT

SPCC is one of the two major inventory control points (ICP), in the Navy (the other being the Aviation Supply Office (ASO), in Philadelphia, Pennsylvania). The self-proclaimed goal of SPCC is to "provide cost effective and responsive supply support to the fleet," [Ref. 5]. To achieve this goal, SPCC must consistently meet or exceed Department of Defense

(DOD) criteria for supply support effectiveness which requires that 85% of all requests for stock items must be immediately available from on-hand material. The effect of this policy on the procurement function is substantial.

SPCC manages an inventory of over 450,000 line items of material ranging from ship propulsion equipment and missile systems to material handling equipment, including the central management responsibility for conventional ammunition. In reality, few of the SPCC managed line items are actually stocked physically at SPCC. Instead, the items are stocked at Naval Supply Centers (NSC), Naval Supply Depots (NSD) and aboard Fleet Stores Ships located close to the fleets. Through these Navy Supply System stockpoints, SPCC monitors Navy material transactions world-wide for its own managed items and directly controls the issue of many critical use items. Usually, material issues take place at the stock point closest to the customer. The stock point then reports the issue to SPCC via a Transaction Item Report (TIR). There are times, however, when the stock point cannot meet the request and the requisition document is passed (normally via a computer communications network) to SPCC for action. If SPCC locates the item, the stock point having it will be advised to forward it to the customer. If, however, SPCC cannot fill the request, the requirement will either be backordered or a spot buy will be made. In FY81, SPCC performed over 39,000

stock acquisition actions and over 35,000 spot buys.¹ This process of making material available for issue is, in actuality, a three-tiered process involving requirements determination, material procurement and procurement funding, which, in sum, make up the core of SPCC's Supply Operations Group (SOG).

"The SOG performs five major functions. For the most part, these functions relate to the deployment/operations phase of a weapons system life cycle. They are: requirements determination, material procurement, procurement funding, material issue and repairables management" [Ref. 6]. Sophisticated computer technology is used to process multi-variable data including procurement administrative lead time (PALT), risk, holding cost and safety levels, to determine a reorder level and an economic order quantity (EOQ) for each SPCC managed item. As noted earlier, TIR's from the fleet supply provide on-going input data as to what material has been received and what has been issued. This information is then automatically compared with actual stocked levels of material and a computer program designed to monitor the status of each line item, determines whether or not a buy is necessary, based on the current stock level and the predetermined reorder level. This is, in a simplified form, requirements determination, the result of which is to either buy or repair material to meet the customers needs.

¹Contract statistics, above and in subsequent chapters, unless otherwise noted, are derived from SPCC Contract Statistics.

In FY1981, SPCC engaged in over 39,000 stock acquisition actions at a value in excess of \$850 million and a near equal number of spot buys which totaled over \$120 million. These items were purchased to support a Navy which is rapidly expanding toward the 600 ship mark and which is composed of vessels as diversified as a Spruance Class Destroyer, which manages an on-board material inventory of over 30,000 line items or a Poseidon Fleet Ballistic Missile Submarine, managing over 20,000 items of inventory. To meet its customers needs from the procurement standpoint, SPCC will engage in routine stock buys to help ensure they meet anticipated demand and/or will process spot buys for not carried items and for high priority requirements for items not in stock (not carried or not stocked items are abbreviated as NSI while items that currently are not in stock are shown as NIS). The majority of spot buys are for a quantity of, remarkably, one each.

Funding for stock-type procurements comes from the Navy Stock Fund (NSF). This is a revolving account consisting of both money and low cost, consumable type repair parts. The fund itself is considered revolving because it is replenished by fleet users who order material carried by (or under) the stock fund and pay for it out of their assigned operating funds. SPCC then turns around and replenishes its stocks with the fleet provided funds. Conversely, fleet commands need not expend their operating funds for depot level repairables or end-items because SPCC receives Appropriation

Purchases Account (APA) funding from the various hardware systems commands to provide for this type of transaction. Similarly, fleet commands need not provide their own funding for the repair of APA material because the hardware commands provide Operations and Maintenance, Navy (OM&N) funding for all APA procured material.

From the above described Supply Operations Group functions (requirements determination, material procurement, and procurement funding), material is made available for issue to the fleet. Of the 450,000 SPCC managed line items, approximately 80% are consumable piece parts and the remainder are repairables (APA) material (a repairable is an item that essentially costs less to repair than it costs to replace, and the overall turn around time to reuse is shorter than if it were reprocured).

In conjunction with its supply support operations, SPCC is also responsible for program support functions, that is, "deciding who, what, when and how the Navy will provide logistic support to a given weapon system," [Ref. 7]. The Weapons System Support Group (WSSG), provides for:

- A) Platform Management...a centralization of responsibility for supply and logistics support for an entire new construction ship or class of ships in addition to providing point of contact liaison for all matters in support of ship construction.
- B) Program Management...the responsibility for coordinating all efforts to assure support for the operation and maintenance of a particular equipment.
- C) Provisioning...determining the range and quantity of spares and repair parts required to support and maintain a particular piece of equipment.

- D) Allowance Documents...the publishing and distribution of allowance documents of which the Consolidated Shipboard Allowance List (COSAL), is probably the most important. The COSAL is used to identify and obtain repair parts needed for maintenance of all installed equipment.

In a nutshell then, SPCC, as an organizational entity, has the all encompassing responsibility of weapons life cycle management. As a weapons system is born, that is, as it moves through the conceptual phase to the early developmental/validation phase, SPCC begins to work with the hardware systems commands. This is a coordinated, combined management effort, which weeds through a myriad of economic, technical, cost, performance and reliability questions to actually validate the system. If successful and the system moves on to engineering development, SPCC's WSSG enters the process to provide coordination and program support and prepare initial provisioning estimates. While the hardware system commands are releasing the first production contracts, SPCC is busily determining inventory management responsibilities and the range and depth of necessary spare parts support for the system, along with building necessary computer and technical files to support the system and preparing and publishing the Allowance Parts Lists (APL).

Finally, when the system is actually delivered and installed aboard a fleet unit, SPCC's SOG takes over to support it. The initially provisioned spare parts stocks will last until actual demand patterns have been established via usage data. Future material buys will be based on demand and pre-determined

reorder levels (requirements determination). The program support function and the supply support function now proceed simultaneously with the inventory manager, SPCC, now having prime responsibility to support the system in the fleet.

C. CONTRACTING DEPARTMENT RESPONSIBILITIES

The Contracting Department, as noted above, is a functional element of the SOG. As such, the Contracting Department is primarily responsible, as the purchasing arm of the SOG, for processing spot buys to fill NSI and NIS requirements and for completing stock acquisition actions for the replenishment of stock in the supply system. These two major responsibilities account for over 95% of all Contracting Department actions (using FY81 data). Additionally, however, the department is also responsible as the purchasing element for the provisioning process, which, again, is the determination of range and depth of repair parts necessary to support and maintain a given equipment. The procurement of conventional ammunition and related material, software contracting for tenant and related activities, service contracting, contracts for commercial repair and station support contracts are all examples of other Contracting Department responsibilities.

SPCC's Contracting Department (Code 02 under the new organizational scheme, discussed below), derives its purchasing authority through the Naval Supply Systems Command (NAVSUP) field purchasing organization. As a contracting activity it has been granted the highest level of authority possible below

the Naval Material (NAVMAT) level, for administrative determinations regarding the procurement process. Current limitations are as follows:

Dollar Authority:

Formally Advertised Awards: unlimited

Negotiated Awards : \$2 million¹

The two basic methods of purchasing, formal advertising and negotiation, are used at SPCC, which is, of course, governed by the Defense Acquisition Regulation in its purchasing activities. SPCC receives concurrent guidance from the Navy Contracting Directives (NCD), NAVSUP Publication 467 and others. The traditional contractual and pre-contractual instruments such as the Invitation For Bids (IFB), the Request For Proposals (RFP), delivery orders and Basic Ordering Agreements (BOA), are used at SPCC. Formal contractual vehicles in use at SPCC are two-party, primarily fixed price, with incentive and indefinite delivery types also used.

In FY1981, SPCC completed over 111,000 contract actions, which included awards both over and under \$10,000, for a total value exceeding one billion dollars. The bulk of the actions (87.5%) were processed in the \$1-\$10,000 range while the most dollars were committed through actions with \$100-\$500,000 (1,351 actions). As noted earlier, stock acquisition actions predominate, followed rather closely (39,019 to 35,016) by

¹In accordance with the Navy Contracting Directives (NCD), negotiated awards over \$2 million require NAVSUP approval while negotiated awards greater than \$10 million call for NAVMAT approval.

spot buy actions. The most common method of procuring SPCC managed material is through sole source negotiation, which accounted for a huge 74% share of the actions of all methods used and likewise accounted for 74% of the value of all methods/actions. Competitive negotiation followed with roughly 14% of all actions while formally advertised procurements encompassed 10.6% of the total.

Purchase orders, in general, and priced, fast-pay purchase orders were the most commonly used contractual vehicles, garnishing nearly 58% of all actions and approximately 10% of the value of total dollars committed (all purchase order types). Orders under Basic Ordering Agreements (BOA) accounted for 48% of the total dollar value committed (9.7% of all actions), followed by awards obtained via the negotiation process amounting to nearly 19% of the total dollar value (2.4% of all actions).

The categories of material falling under the purchasing responsibility of SPCC's Contracting Department is lengthy and comprehensive. By far, shipboard equipment receives the most attention. LH and 7H COG shipboard material accounted for over 70% of all purchase actions in FY81, but electronics, test equipment, ordnance and material handling equipment also contributed to the hefty workload. This material was procured, not only for stock replenishment, but in support of many important Navy programs including the BB-62 reactivation project, Trident, Foreign Military Sales (FMS) and several others.

The duties and responsibilities of SPCC's Contracting Department are multi-faceted and critical to the effectiveness of the Supply Operations Group and the Weapons Systems Support Group which make up the heart of SPCC's management mission. The success of SPCC's mission depends on its ability to provide material to meet its customers demands, which of course, can only be accomplished through the efficient utilization of its purchasing arm, its organization-industry interface. To be a responsible element in the total SPCC mission, the Contracting Department must set realistic objectives in the same manner as that accomplished by industrial and private purchasing concerns. As Lee and Dobler note in Purchasing and Materials Management, the basic objectives of purchasing should be to:

1. Support Company (organizational)¹ operations with an uninterrupted flow of materials and services
2. Buy competitively (where feasible) and wisely
3. Develop reliable alternate sources of supply
4. Develop good, continuing vendor relationships
5. Achieve maximum integration with other departments of the firm (organization)
6. Train and develop highly competent personnel who are motivated to make the firm (organization) as well as their department, succeed.
7. Develop policies and procedures which permit accomplishment of the preceding objectives at the lowest reasonable operating cost (cost to the Government). [Ref. 8]

¹All parentheses in Steps 1-7 of this list are provided by the thesis author.

As we shall see, where feasible, these objectives impact heavily on the well being and efficient operation of the department, but the ability to realistically meet these objectives in the face of an ever changing environment filled with converging and conflicting demands, duties and responsibilities, is often suspect. Nevertheless, the Contracting Department's responsibilities are clearly set and well recognized. We will now see how the department has been organized in its efforts to meet its mission.

D. CONTRACTING DEPARTMENT ORGANIZATION

A knowledge of the functional element's responsibilities brings with it a need for a clear recognition of the operating tasks associated with each responsibility. Proper organizational structure achieves this purpose. "Three principal factors largely determine the level of performance attained by a group of people: (1) capabilities of the personnel, (2) motivation of the personnel, and (3) the organizational structure within which the personnel function," [Ref. 9].

Functionalization evolved from the results of studies conducted by Frederick Taylor, relating to specialization of the workforce. The basic concept provides that when similar activities are grouped together, maximum efficiency is obtained in the quest to reach overall organizational objectives. As can be seen from Exhibit (A), the old Contracting Division Organizational Chart (corresponding to the organizational structure being phased out in late 1982, the time period in

which thesis research was conducted), the organizational structure then in existence, failed to take advantage of efficiencies obtained through greater functionalization. For example, Buying Branch Number 1 performed such diversified tasks as purchasing ordnance as contrasted to electrical equipment, and HME&O material as opposed to purchasing for FMS. Increasing the scope of activities necessary to be monitored and controlled, especially by a limited management staff significantly broadens the scope of each managers job, which may or may not place the job above the manager's realizable ability. The organization was then, creating for itself a situation wherein downstream administrative management problems could be traced back to a lack of pre-award management attention. This problem was fostered not through a lack of desire or ability on the part of the responsible manager, but by a sheer inability to cope based on scope and diversity. Functionalization, of course, is not an end in itself. When an organization is too functionalized it runs into the problem of losing sight of overall objectives because extreme narrowness of focus tends to take the place of the realization of what "we are really here for". Notwithstanding its disadvantages, the need for some level of increased functionalization is readily apparent.

SPCC, like virtually all governmental agencies, cannot afford the supervisory costs associated with employing a large number of subordinate managers, under the branch manager, responsible for supervising a relatively small number of

personnel. This would be an optimum situation wherein the activities of branch personnel could be carefully monitored and controlled, and since the levels of management in the Contracting Department would not be too deep, communications would not be sacrificed. Unfortunately, absent this scenario, the Contracting Department is forced to place the supervision of many employees in the hands of a very few managers. A manager in this situation tends to focus on a broader range of activities and becomes more of a generalist. Being a generalist, in and of itself, is not all bad, but put into the framework of a diverse organizational structure we can see the beginnings of an inbred organizational inefficiency. This stems from a structural need that requires operating personnel to be capable of making a broader range of decisions because less direct and detailed supervision and control is available to them. Experience has shown that although a number of individual workers have the ability and desire to make relevant decisions, the greater whole does not and the organization suffers because of it.

The ideal, lacking (or at least conceptually so) prior to the end of 1982, was the desirability of grouping assigned operating tasks in a manner that facilitates managerial control. As Peter Drucker noted, "To improve organization structure...will therefore always improve performance," [Ref. 10]. Exhibit (A-1) shows the new Contracting Department organization at SPCC put into effect early in fiscal year 1983. It can clearly be seen that the new organizational structure

is much more highly functionalized than the old. The new structure more clearly specifies authority and responsibility for each operating activity. For instance, under the old structure, code 371 (buying branch number 1), was responsible for:

- A) purchasing material for stock
- B) immediate issue FMS spot buys
- C) FMS special program requirements
- D) for processing CASREP requisitions and ensuring the materials delivery
- E) for performing expediting functions

The new "division", code 021, the Hull Mechanical and Electrical Contracting Division, quite simply, "Contracts for all Hull, Mechanical and Electrical Material Supplies, services and associated requirements in support of the Hull, Mechanical and Electrical Support Department, code 50, of the Weapons Support Group, code 05." Gone is the diversification of tasks and responsibilities, including expediting and CASREP contracting. Duties, tasks and responsibilities now have a common thread, are more uniform and lend themselves to improved efficiencies by consolidating into more specialized working groups that can more easily be dealt with by the generalist manager.

The Contracting Department, under the new organizational scheme, divides rather easily into five general classifications common to most buying activities:

- A) Administrative
- B) Buying

- C) Expediting
- D) Special Staff Work
- E) Clerical

Even more specialized tasks, as will be seen, are derived from each of the major classifications and provide for a high degree of specialization allowing for even greater flexibility in expanding the workforce to meet operational needs.

The responsibilities of the Contracting Department, code 02, were detailed in Section B, above. The major buying divisions established to help meet these responsibilities are divided into four separate functional groups. These divisions, along with their designated buying functions, have other related duties which include:

- A) acquisition planning and review
- B) emergency expediting for critical items
- C) cost and price analysis
- D) negotiations
- E) determinations of reasonableness and responsibility
- F) contractor assistance
- G) market analysis

The various branches associated with each major division have the same basic duties as shown above, tailored to their specific function. Exhibits (C-F) illustrate the structure and divisional breakdown of the major buying divisions. It should be noted that the Special Contracts Division, code 024, while having the same basic functions as the other buying

divisions, is unique in that it supports more of a diversity of accounts, for example:

- A) support of operating needs of tenant activities
- B) CASREP/high priority ICP purchases
- C) FMS requirements
- D) repairables under SPCC cognizance

The Contract Management Division, discussed in detail in Section D, below, can be considered as both a buying and an administrative element that supports the major buying divisions. Primary clerical responsibility falls under the cognizance of the Contract Services division, code 026, shown in Exhibit F. This division is responsible for:

- A) "control, filing, drafting, typing, assembly and distribution of purchase documents" [Ref. 12]
- B) file maintenance and bidder information
- C) internal auditing and data reporting

Finally, the Contracting Department Staff, code 02A1, is composed of senior management personnel including the Chief of the Contracting Office, a Navy Captain, legal counsel, a Defense Contract Audit Agency (DCAA) representative, a clerical staff and other special staff personnel. Basic functions of the department staff, are to:

- A) direct the purchasing function
- B) maintain functional liaison with other commands
- C) interpret and promulgate policy and procedure
- D) act as the SPCC contract review board
- E) perform other important managerial duties relevant to exercising major contracting authority.

Provided with an illustration of the Contracting Department, its responsibilities and organization, focus will now be directed to a smaller segment of the operating organization, the Contract Management Division, to begin to more closely focus on the immediate operations and involvements that are most closely associated with problems of management this thesis seeks to address.

E. THE CONTRACT MANAGEMENT DIVISION

The organizational breakdown of the Contract Management Division is shown in Exhibit G. The division, code 025, performs selected contract administration functions, primarily on "fast pay" type orders and acts as the principle contracting officer (PCO) monitor for all "C" type contracts and BOA orders. The division is responsible for:

- A) analyzing and monitoring contractor performance
- B) expediting and administering selected high priority requirements
- C) conducting DAR sanctioned administrative actions such as:
 - 1) claims
 - 2) settlements
 - 3) terminations
 - 4) modifications
 - 5) finalizing unpriced orders
 - 6) performing the full range of administrative functions deemed necessary following contract award

The division is headed by a Navy Lieutenant Commander with principal assistance and guidance of a functional nature being provided by an experienced assistant branch head and four branch supervisors. The divisional structure is broken down into four functional branches generally headed by a GS-11 supervisor.

The Ammunition and Other Special Programs Branch, is responsible for contract administration on all ammunition contracts. (It should be remembered that SPCC has central management responsibility for conventional ammunition.) Further, the branch has contract administration and monitoring responsibility for special program contracts such as Poseidon, United Kingdom Programs, etc. The branch, in late 1982, had ten people assigned to it (not including clerical or the supervisor), with three vacant positions. In 1982 there were greater than 1600 ammunition acquisition actions.

Two of the four contract management branches are responsible for regional administration of SPCC contracts. The Eastern United States branch covers contracts being performed in the East, while the Western United States branch works with DCAS regions in the West. Combined, these branches employ 27 workers with two vacancies (as of late 1982). Basic duties include:

- A) exercising the full gamut of authorized administrative processes including preparation and execution of unilateral and bilateral modifications
- B) conducting production drawing approval administration

- C) reviewing and monitoring contractor performance
- D) problem solving and vendor relations
- E) terminations, claims settlements and progress payments
- F) tooling records maintenance

Finally, the External Acquisitions/Contract Expedite Branch is primarily responsible for monitoring contractor performance on high interest contracts and for expediting and performing follow-up actions to ensure timely deliveries of material. This branch monitors contract delivery delay notices received from DCAS and prepares input to update SPCC's computer files. The branch also processes status/expedite requests on end use requirements, initiates appropriate actions to resolve delinquencies using computer generated data and processes status requests from stock points, along with other essential duties. The branch has 15 employees.

In rough outline, then, the Contract Management Division has administrative cognizance over all SPCC generated contracts, delivery orders and BOA's including point of contact responsibility for administration of DCAS assigned contracts and first line responsibility for "fast pay" spot buys. No contract administration is performed in or by the major buying divisions. It may be considered that each of SPCC's nearly 100,000 contract actions (including MOD's over and under \$10K), processed in FY81 found its way into the files of the Contract Management Division. Some required action, some did not. On top of this total should be included prior years contracts

not yet completed, that require some form of administration. More precisely, all contracts awarded by SPCC, which require some form of administrative action, will go to the Contract Management Division.

To round out our exploration of the management environment in which the procurement of stock and in-use items exists, we must examine the workload faced by the personnel of the Contract Management Division to provide an initial perspective on the uniqueness or singularity of this particular procurement arena.

F. WORKLOAD CHARACTERISTICS

Experience has shown that roughly half of all award actions completed in a given year, will require some form of administrative action. This has held true at SPCC where its Contract Management Division faced over 50,000 administrative actions of one form or another in FY1981, which saw total contract actions in excess of 100,000. Also to be included are the over 45,000 "fast pay" purchase order spot buy actions performed, which are the sole responsibility of the Contract Management Division. This roughly equates to between 175-200 active, open cases on each administrator's desk per month (the degree of difficulty of each action would have a profound effect on the substance of that figure). Contrast this to a comparable (both in size and function) organization in the industrial sector facing one third the volume with an equal number of employees who perform both buying and all administration.

This group faces a monthly, open caseload of perhaps 40-60 actions. Whereas the industrial agents may deal with 4000-5000 contractors each year depending on the size of their supplier base, SPCC's agents face upwards of 7,000 each year, some with as many as 20 active contracts apiece.

The work is performed by a staff consisting mainly of GS-5 through GS-9 with the lower grades acting as expeditors and dealing with initial delinquencies and the higher grades handling the tougher assignments. Education has traditionally been on-the-job with the few DOD or Navy sponsored training courses being utilized as permitted by schedules and funding. The absence of a variety of higher grade assignments leads to a high rate of attrition in the workforce especially following promotion to a grade above GS-9 where no gratifying work, save the few supervisor slots, is available to be occupied and the individual is faced with seeking other opportunities. The buying divisions have traditionally had higher grade assignments than the Management Division. In the industrial sector, in-house training and cooperative ventures with local universities along with broad on-the-job training allows them to realize a more highly educated workforce comprised of approximately 70% BA/BS degree recipients. SPCC's Contract Management staff is well below this figure.

The diversity and scope of the workload is enormous. The Contract Management staff must deal with upwards of 100,000 actions that may have been for stock, may have been for one

time use or for ammunition; the actions may have resulted from an advertised vehicle or they may have been negotiated, possibly (probably) even sole-source. They could be in the form of a purchase order, BOA, delivery order, modification, BPA call, negotiated agreement or be a formally advertised award. They may be valued at anywhere from \$1 to over \$1 million and may represent something as simple as a latch for a watertight door to a circuit board for a Poseidon submarine, the absence of which may force the sub to not meet its critical commitments. The customers may range from a tugboat to a Nimitz Class aircraft carrier, with parts status being requested by anyone from a storekeeper to an admiral. All of this must be accomplished in the face of a lack of adequate staffing for the volume of work faced, constricted response times (to preclude loss of government rights), low grade levels, high individual workloads and constant turnover. The face of the procurement environment being developed is one of intense pressure created by the need to support a high level of demand with few available resources. Management by exception becomes the rule because sheer volume precludes the use of more ordered techniques to ensure one's mission responsibilities are met. Where delinquencies are concerned, the above described environment has engendered a management response that is virtually 100% reactionary.

III. THE PROBLEM

A. IN GENERAL

No one would argue the fact that today's Navy is a highly complex, highly automated organization that has, to a great degree, supplanted the need for large numbers of shipboard personnel by substituting machines to do the work that man once performed. From simple housekeeping tasks to early warning and command and control, the Navy has dramatically increased the technical complexity of its warships. Likewise the Navy has also increased the level of technical dependency that it must subject itself to if it is going to have the luxury of utilizing the vast resources these systems offer. A single surface to air defense system contains nearly a quarter of a million feet of wire, over 10,000 resistors plus thousands of capacitors, relays and other electronic devices plus a myriad of other interworking functional components. Consider the many different classes of ships in the Navy, the variety of weapons suites, the different power plants, mixtures of navigation systems, ordnance, auxiliary systems, and communications units, down to the very galley equipment used to feed the crews. All these, and more, are essential to the operational integrity of the vessels they support. They are also, because of their complexity and heavy reliance on an enormous number of integrated parts (notwithstanding their high, published, mean time between failures), subject to varying periods

of downtime because of system inoperability. Without the necessary repair part support, the crew is unable to repair the system in place, and the ship's overall readiness and mission capability may be severely jeopardized as a result. On a large scale, problems of this sort could prove devastating.

In fact, many ships do suffer substantial capability degradation because of parts non-availability. There are many reasons why these ships cannot obtain needed parts, and it would be misleading to place the entire blame on the shoulders of industry. Evidence is abundant, however, supporting the claim that delinquency, on the part of Navy contractors, plays a key role, in exacerbating the shortage of repair parts needed to support the fleet. The Navy, in fact, is experiencing a serious problem arising out of late deliveries of material ordered to replenish inventories of repair parts and consumable items. Navy wide, it has been estimated that 25% [Ref. 13] of all hardware contracts experience some delay in their required deliveries. At first glance this figure appears somewhat high, as related to stock and in-use item procurement. This is most likely due to the inclusion of production contracts, in general, which may or may not be related to stock items. A more reasonable percentage figure, derived from statistical sampling, records review and personal interview, fluctuates between 17%-19%. This figure does not include late delivery data for spot buys of in-use items. Since the volume of spot buys is nearly equal to the volume of stock acquisition actions in a given year, and because spot buys are very low

volume (usually one each), "one shot" events, to contractors who are, likely as not, non-defense oriented, it is reasonable to assume that late deliveries in this category approach or equal the percentage rate for stock buys. In sum, allowing for some error, the overall rate of late deliveries of stock and in-use items, must equal or slightly exceed the apparently "somewhat high" figure of 25% noted above.

In Chapter I, it was established that not all late deliveries are contractor caused. An adjustment in the overall percentage figure is needed then, to establish that portion of late deliveries that is considered to be the sole fault of the contractor, or delinquent. As shown in Chapter I, Section C, over 80% (actually, as sampled, the figure is closer to 85%) of all late deliveries are, according to the terms described earlier, delinquent. This means that roughly 20% of all stock and in-use contracts can be classified as delinquent.

SPCC, as a weapons system life cycle manager, has, in effect, cradle to grave responsibility for the repair parts support of the Navy's expanding fleet. According to DOD, a key element in the readiness capability of this fleet, is the assurance that SPCC can satisfy 85% of all requests for stock items immediately from on-hand resources. Add to this SPCC's responsibility to respond to immediate need (NSI) requests from the fleet and it can clearly be seen that the "responsive supply support to the fleet" credo is severely tasked. This difficult mission is complicated when 20% of the contracts,

needed to fill on-hand resources or provide for immediate fleet support, fall delinquent.

The problem of delinquency is not unique to the Navy, nor is it limited to the procurement of stock and in-use items. What is unique, however, is the preponderance of contractor fault as contrasted to government fault in this particular "house" of procurement. In systems and commodity procurement, the ratio of contractor to government fault, when assessing responsibility for late deliveries, is closer to 50/50. More important, the impact of delinquency in stock and in-use item procurement hits much closer to home because real-time operational effectiveness is directly impaired by parts non-availability. Delinquency in systems and commodity procurement is also sorely felt, but in neither case is actual fleet capability jeopardized to the extent that a warship would be considered incapacitated because of it.

The delinquency problem, as peculiar to SPCC, is the subject of this chapter. Features of the existing procurement environment, will be analyzed in an effort to provide insight as to why at least a portion of the delinquency problem may be considered a function of this somewhat unique environment. Following this, the chapter will move to a detailed review of just what shape the problem takes; its magnitude, relationships, characteristics and so on. In addition, some very basic management considerations will be discussed, to include, how management perceives the problem and responds to it, and the

limitations it faces in doing so. Finally, the chapter concludes with a synthesis of the many ideas and considerations presented thus far, providing a perspective on the inseparable relationship of problem to environment.

B. AS A FUNCTION OF A UNIQUE ENVIRONMENT

The problem of delinquency may be linked to two characteristics which provide the element of uniqueness to this particular procurement environment. The two characteristics are:

A) the dynamism of the process

B) the management of the process by a public entity.

First, consider the dynamism of the process. Dynamism is a term that refers to an explanation of a given environment in terms of forces and their interplay. It is proposed here, that these forces are characterized by factors which are, to a large extent, unique to this procurement environment. Their interplay creates, between the customer (SPCC) and its suppliers, a dichotomy of often conflicting goals, objectives, needs and desires. This dichotomy manifests itself in many system ailments, not the least of which is delinquency on the part of Navy parts suppliers. An illustration and discussion of some of the more salient factors associated with this environment should give credence to this hypothesis.

The SPCC supplier base for stock and in-use items is in excess of 7,000 individual sources. Some are large firms that are vertically integrated and supply their own parts and sub-assemblies. The bulk, however, are small firms that may

reasonably be characterized as "parts suppliers", dealing primarily in tubes, gauges, valves, instruments and so forth, for subsystems. These parts are, for the most part, used in both weapons and commercial products. While some of these firms are completely dedicated to defense business, the majority of them are heavily involved in commercial practice and respond to military requirements in many cases, only as an alternative to ensure they utilize existing capacity, keep their workforce actively engaged and assure themselves of some measure of future cash flow. Few would argue that the expected rate of return on a commercial venture (other factors considered), provides much more incentive to the contractor to take his business there than settle for less return on his effort in the defense sector. Likewise, the prospect of volume stability and the knowledge that good performance (over other factors stressed by DOD) will assure continuing business relationships, draws the contractor further away from reliance on defense contracts. These factors are representative of just a few of the forces behind the lack of contractor commitment to Navy work. This lack of commitment is one of the root causes of the delinquency problem. Other equally important factors that provide for a dichotomy of perspective and lead to contractor intransigence are:

- 1) Fleet usage data is often erratic and inaccurate. If a particular part is not in stock, when requested, the customer will often obtain the item in a manner that circumvents the

"system" creating a lack of usage/demand data needed for requirements determination. This action degrades inventory (stock) control efficiency, and causes replenishment to occur (for a variety of items) at erratic intervals. This means SPCC must pass the volume inefficiencies down to the parts suppliers. If the suppliers choose to de-emphasize these commitments because of their random nature and delivery is late, the material may have to be reconsigned (material originally procured for stock must be passed directly to the end-user) and thus never enter the stock system. The cycle then repeats itself, eroding otherwise healthy relationships.

2) Many material items require special consideration. Take, for instance, the battleship New Jersey reactivation project. This is a warship of World War II vintage that up until just over a year ago had been inactive since Vietnam. Gauges, valves, piping, tubing, and the lot had to be replaced or at least duplicated to provide spares. This monumental task had to be faced by the parts suppliers and the SPCC procurement managers. Were the original suppliers out of business? If so, do the replacement parts need to be redesigned and refabricated? Who will do the job? At what cost? How long will it take? Are parts suppliers willing to retool for what benefits there are to be gained? Will those that are willing, be motivated to deliver the items on time? This is an extremely difficult aspect of the parts procurement environment. Because of the advent of new programs such as the

battleship reactivation, the procurement manager must, in many cases, put aside good business judgment and make award to the supplier who will meet this peculiar requirement. The procurement manager must then rely, often to his detriment, on the good graces of the supplier to meet all contractual obligations, including delivery. Need has superceded management flexibility in this case.

3) A corollary to the above would be the processing of spot buys. These represent 50% of all work performed by the Contract Management Division. Spot buys are processed by SPCC to fill NSI requests from the fleet. Virtually all spot buys are for a quantity of one each. If the item is noncommercial and not stocked it must be fabricated. What factors would motivate the supplier to eagerly pursue such a contract? Again, to fulfill the need, the manager must contract with whoever is willing to perform on such a low level task. In such cases, and like #2 above, getting the job done takes higher priority over who does it and the manager, by default, sets himself up for a downstream administrative ordeal, usually centering around delinquency.

4) The non-integrated, smaller parts suppliers have traditionally been noted for poor production, planning and control. This is one of the prime sources of the delinquency problem, ranking higher than any other factor save the supplier's inability to control his own sources of supply. Regardless, it may reasonably be argued that the two characteristics, together, contribute the most toward promoting delinquency in stock and

in-use item procurement. The Navy requires its contractors "to translate the terms and requirements of their contracts into orderly steps such as: purchase of materials, fabrication of components, manufacture and assembly of end items and packaging and shipment" [Ref. 14]. Relative to vendor control, the supplier's purchasing system should be designed to support the internal production process by solidifying requirements and placing contracts with reliable and capable subcontractors and vendors. Why reality does not meet the expectations of the Navy, may be answered in a number of ways. First, for many of these firms, long range scheduling and control take a back seat to increased cash flow (what there is of it) and 100% capacity utilization. Second, many parts suppliers simply do not know what their capacity is, or if they do, they optimistically overestimate it (or their capability to perform within it). Third, many (most) of these concerns do not have what can be considered to be a professional management staff (even the huge, vertically integrated, major defense firms allow parts production, planning and control to take a back seat to most other commitments). Planning and control is accomplished through the experience of a foreman or a supervisor that "knows the people and the plant." Rarely does a formal system of control such as Line of Balance exist in these firms. Even more simplistic phase planning or milestone variance charts are seldom considered. Similarly, the absence of vendor control is widespread. The majority of these firms

simply do not provide the volume of business necessary to exercise leverage over their material suppliers, who are in many cases larger than the parts suppliers themselves.

5) Finally, the frequent use of negotiation on a sole-source basis for the procurement of stock and in-use items must be considered a major feature of this procurement environment and a substantial contributor to the delinquency problem. In the over ten thousand dollar range, sole-source negotiation was used in over nine thousand actions which equated to 74% of the total. There are five basic situations wherein negotiation on a sole-source basis is acceptable, but what it really boils down to is the fact that no other known source has the capability of meeting the requirement. If this is so, and it appears to be so in nearly 75% of the cases, the procurement manager is effectively divested of whatever leverage he might normally have, to secure contractor performance. Since the sole-source supplier is needed to fulfill the requirement, it is in the enviable position of being able to dictate terms (and price). Complacency takes the place of achievement because there is no competition, work is guaranteed and any remedies the Navy might seek to apply against the contractor are mitigated by the overriding need to obtain the end result. All five variables are impacted in this type of environment, especially the fifth.

The second element which gives rise to the uniqueness of this environment is the fact that the procurement process is managed by a public entity.¹ It will be shown that this characteristic not only provides a vehicle for the formulation and growth of the delinquency problem but actually serves to impede the problem-solving process.

Both public and private sector management environments are a composite of existing strata (rules, regulations, procedures and traditional relationships), and dynamic forces that constantly seek to alter the environment's complexion. The existing strata initially dictates the boundaries and establishes the framework within which the procurement process is performed. Over time, dynamic forces of interaction (such as those discussed above), enter into the formula seeking to redefine the manner of performance. The process, as changed by the dynamism of interacting forces, becomes increasingly inefficient because of the static nature of the existing strata. The basic difference between public and private sector response to such change is as follows:

A) In the private sector, the overall objective is to maximize return on a given investment, and among others, enhance the firm's competitive posture in its particular market. This being so, management is free, within a responsive management environment, to exercise a great deal of flexibility to develop, implement and use a wide range of tools and techniques best suited to enable the firm to meet its overall objectives.

¹Public (federal), as differentiated from private sector management.

The key term to remember is flexibility. When the dynamism of the environment demands change in the existing strata to preclude inefficiency and problem formulation (not to say that there are no problems in the private sector), the private sector manager has the ability to exercise a great deal of flexibility in changing the existing strata to meet the new demands placed upon it. Therefore, as discussed in Chapter I, the private sector has the capability of exercising a great deal of control over the degree to which any one of the five variables might change during the course of a procurement cycle.

B) There are over 800 separate procurement entities in the public sector. As a result, there is a multiplicity of end objectives some of which are unclear, subjective and not at all susceptible to the same amount of quantifiability as in the private sector. The management environment begins, not with the entity actually, physically performing the process, but with the public at large whose will presents itself in Congress. Rather than operate with the degree of autonomy and flexibility necessary to efficiently meet all end objectives, the procurement manager of a public entity must first assess his accountability to the public, Congress, GAO, various Offices of Inspectors General and the press. Then, he must proceed through the manifestation of this "will" which is embodied in statute, executive order, agency regulation and standard operating procedures, before employing what tools are left, to resolve the strata/dynamism conflict.

Thus, the essential difference between the public and private sector procurement managers, is the ability to respond with flexibility to changing conditions. Inflexibility provides a source of origin and growth of the delinquency problem. The public sector manager is every bit as competent as his private sector counterpart and each has the expertise to distinguish early warning signs of problem formulation. What they do not share is an ability to change their existing strata to meet new demands and thus prevent many problems before they have the time to grow. There are other aspects of the distinction between public and private sector procurement management that deserve mention here because they too have an impact on delinquency problem management.

As noted in Chapter II, the first organizational objective of procurement is to support the organization's operations with an uninterrupted flow of materials and services. Whereas the operations of a private entity are generally production support, the public's (SPCC) is largely consumption by a third party. In the private sector, most firms have a buyer control his particular procurement(s) from birth to death. The most critical factor for him, at the outset, is "schedule." The buyer is inured with a commitment to respond to "when needed" first and then cost and other factors second. As a result, a great deal of management attention is applied to the procurement, on the front end, to ensure clear sailing (with regard to timely delivery) downstream. In the public sector and at SPCC, the situation is somewhat different. Oversight of the expenditure

of public funds is intensive. Because of this, one of the primary (measurable) objectives of the public sector is economic efficiency. In the non-major system procurement environment, cost or price becomes the primary mover. Unlike the private sector, public sector concerns separate the buying and administering functions (usually because of the enormous workloads... see Chapter II, Section F). The result of this is to take from the buyer a sense of dedication and commitment to ensure the success of his particular action and replace it with a near term desire to meet the five variables of the procurement equation as best he can and then pass the responsibility to someone else. Success is measured in awards made and dollars saved rather than an accountable analysis of how well all five variables have been met and managed. This shifting of responsibility and accountability from a buyer to an administrator creates a management gap that allows for the growth of many problems, including delinquency.

Related to the above, is industry's practice of nurturing traditional business relationships. The buyer not only controls the procurement from start to finish, he also tends to consistently deal with the same sources of supply. As shown above, an administrator in the public sector is usually not involved in the buying end of a procurement. Absent the power to award contracts, the administrator is frequently given second billing by suppliers. The private sector buyer, on the other hand, exercises a great deal of control over suppliers

because he holds other contracts and orders of interest to him. While the buyer is following up on a previous action, he has the visibility of other actions waiting to be processed. This provides leverage for the buyer and ensures he'll be listened to. Buyer/supplier rapport is a key element in the problem-solving, problem-avoidance area. Suppliers are especially sensitive to not jeopardize their relationships with key clients and therefore will go out of their way to work with the buyer to solve any outstanding problems. Statutory and regulation considerations and the buyer/administrator split, paint a different picture for the public sector. Political, social and economic considerations embodied in statute, regulation and policy requires the public entity procurement manager to, in many cases, make award on other than purely business considerations. The ability to choose the "best" supplier in every procurement and foster relationships only with those serving the best interests of the entity, is absent. Suppliers (with the exception of some sole-source firms), for the same reasons, cannot count on establishing fruitful, long-term relationships with the public source. This reduces the dependency of the supplier on the customer, leaving the customer little business leverage. The buyer/administrator split further exacerbates the situation because neither has the long-term ability to effectively deal with the supplier. Each is part of the process at separate

points. The buyer has little true¹ control over who receives the award, and once awarded has nothing more to do with the action. The administrator has no power of the purse (regarding awards) and no say in the mechanics of the initial award. The supplier, recognizing such, has far more latitude to deviate from contractual provisions, with success, than he would when dealing with a private sector firm. This is not to say that suppliers jump at each opportunity to be intransigent. Rather, the opportunity to do so is far more available in the public sector than in the private. Public sector management is, thus, greatly impeded in the problem-solving, problem-avoidance process by criteria deeply implanted within the system.

Another segment of this distinction relates to the status of the parties involved in the process. In the private sector, size and financial strength largely differentiate between the status of parties and their role in business relationships. Nevertheless, each is equal in the law. In the public sector, the sovereignty of the buyer directly affects the buyer/supplier relationship. Lasting relationships evolve, in the private sector, from mutually beneficial long-term commitments.

¹Although a determination of non-responsibility may be filed to shift award to other than a low bidder, the determination may be contested and overturned, especially by a small business. Negotiated awards in stock and in-use item procurement are made primarily on the basis of cost/price with the low offeror usually being successful. The buyer has little or no latitude in the award of sole-source requirements.

Because of the equality in law relationship of private sector firms, long-term commitments and continuity of requirements are prevalent. In the public sector, the prevailing party can change its mind at any time before, during or after contract award. The perceptions and policies of the sovereign frequently change. These changes affect procurement procedures, clauses, costs, volume, scope of programs, and virtually anything else under its preeminence. The results of these changes are often severe, always disruptive. As a consequence, commitment to the public sector is thin and long-term relationships few.

In summary, this segment has sought to portray delinquency as a function of a unique environment. The uniqueness of the environment revolved around the fact that a certain dynamism inherent in the process created an interaction of forces peculiar to stock and in-use item procurement. This provided for a dichotomy of goals, objectives, needs and desires between the customer and the supplier. This dichotomy manifested itself in a lack of commitment on the part of the supplier toward his Navy contracts. The lack of commitment was attributable to a number of factors which included:

- A) lack of expected profit or return
- B) changing requirements and volume variations
- C) peculiar requirements
- D) poor internal scheduling and control
- E) sole-source complacency

All of the above, it was proposed, led to supplier intransigence, lack of proper management control and therefore, delinquency. A second source of environmental uniqueness centered around the fact that the procurement process was managed by a public entity. As such, the management process was marred because of:

- A) inflexibility
- B) lack of accountability and commitment
- C) absence of relationships and managerial leverage
- D) changing requirements

No doubt a more in-depth, comprehensive study would shed light on numerous additional characteristics of the stock and in-use procurement environment that contribute to the problem of delinquency, but it is hoped that the above gives some indication of the depth of the problem. Solving the problem is not as simple as shifting a few resources or developing a new management information system. The problem begins deep inside the core of the system. It is part of it and will likely always be there. Nonetheless, such vehicles of delinquency as lack of supplier commitment may be attacked and mitigated by first recognizing the root causes of it and then applying aggressive management effort toward its resolution. Likewise, inflexibility and other public entity related ills may be overcome by a process of gradual system reform beginning in-house and moving outward toward regulatory and policy reform. These and other considerations will be more fully discussed in Chapters IV and V.

C. SCOPE AND CHARACTERISTICS

To this point, discussion has centered on the "larger" aspect of the delinquency problem. From an overview of delinquency in general to an analysis of environmental characteristics considered to be associated with the root causes of the problem, the reader has had an opportunity to acquire a basic framework of understanding. This section will further develop that understanding by providing a detailed review of the delinquency problem as seen from the perspective of SPCC's Contract Management Division. The specifics of the problem, its scope and characteristics will be illustrated here.

Much of the data discussed, especially concerning individual contractor delinquency, has been taken from SPCC's Contractor Delinquency List (CDL). This list, discussed in depth in Section D of this chapter, is, briefly, a tool used to monitor the status of SPCC cognizant contracts which are currently delinquent. The remainder of the data has been obtained via interview, records review, correspondence review, sampling and spot audit. The intent of the data presentation and analysis is to augment what has been learned about some of the more covert vehicles of problem formulation with an appreciation for the concrete overt facts confronting the procurement manager as he goes about the problem-solving process.

To begin the analysis, it would be appropriate to examine what can be considered a classic example, from top to bottom, of the problem of delinquency facing SPCC. The example is

taken from a summer assignment report prepared by LCDR D.J. Feltes, SC, USN, while assigned to the Defense Contract Administration Service Management Area (DCASMA), Chicago, Illinois. The purpose of the research effort was to determine the cause of the high rate of delivery delinquency experienced in completion of Navy contracts administered by DCASMA Chicago.

The report noted that 69% of the 211 currently delinquent contracts at DCASMA Chicago, were under the cognizance of SPCC. Of SPCC's 146 delinquent contracts, fully 43% or 63 contracts were in the hands of a single contractor, Target Corporation. Target Corporation is a small business. Its livelihood is centered around the fabrication of obsolete replacement or short run replacement of current electronics equipment. As highlighted in Section B (parts 2 and 3) of this chapter, many contractors obtain Navy contracts because the Navy has nowhere else to turn or the contractor fills a gap left by others not willing to take on the requirement. Target has mastered this technique. Its experience in repeated follow-on parts replacement for specific equipments and its large library of Navy drawings, specifications and test procedures has allowed Target Corporation to develop a Navy business niche that prospers despite its high delinquency rate.

The driving force behind Target Corporation's high delinquency rate is its poor production, scheduling and control and inadequate materials purchasing practices. This problem

was discussed in Section B of this chapter. Up to the end of 1982, Target relied on manual control systems for production scheduling, materials ordering and for tracking and cost control, despite shipping a weekly volume of finished goods valued at near \$200,000. (To their credit, Target is in the process of installing automated control systems.) Nearly 70% of all of Target's delinquent contracts were the result of poor production, scheduling and control.

In addition to poor control, and as proposed in Section B, lack of contractor commitment is also a major contributing factor to delinquency. As the Feltes report notes, Target Corporation is no exception. The report shows that Target consistently worded its requests for waiver or modification in such a way as to confuse the government to such an extent as to create a dilemma over who was actually responsible for performance delays. These results are often submitted just prior to or after the performance date and provide relief for the contractor in being able to disguise delinquency altogether. As proposed in the report, the contractor gains "...the ability to manage his backlog, to optimize cash flow and avoid costly overtime, facilities and personnel expansion, control systems improvement and short term borrowing" [Ref. 15]. When a contractor "games" the system in such a way as to provide for its own benefit, to the detriment of the other party, it shows a wholesale lack of commitment to fairly abide by all contractual requirements, and thereby provides the vehicle of delinquency.

The Target Corporation case is just one example of the problem faced by an organization whose supplier base exceeds 7,000 individual sources. It is especially relevant, however, because it is a real world example of the effects of factors and considerations discussed earlier in this chapter and it gives a great deal of perspective to the remainder of the delinquent data to be presented here.

A statistical sample of 200 of the 2000 contractors listed on the SPCC Contractor Delinquency List, dated Julian 82248, was conducted to ascertain, among other things, the total value of existing delinquent contracts and the overall delinquency rate.¹ It should be noted that the sample was taken after a purge of contracts found to be completed, but not reported as such and therefore not yet deleted from the listing (more will be said about the listing in the next section). A review of the delinquency list, conducted by the Contract Management Division yielded the following:

Contracts listed as open with SPCC:	6971
Contracts listed as delinquent before review:	1903
Contracts known to be delinquent after review:	1171
Difference:	<u>732</u>
Percent Delinquent as shown in report:	16.79% ²

¹The delinquency list shows stock buys only. Spot buys are not recorded on the list.

²The percentage rate as reported is questionable. The ratio used for computation was $1171/6971 = 16.79\%$. However, if 732 of 1903 contracts previously shown delinquent, were in fact completed, the total "open" contracts figure must be reduced accordingly. A more accurate assessment would be $1171-732$ or 6239. The delinquency rate would then be: $1171/6239 = 18.76\%$. Of course, if some of the 732 were "open" but found to be not delinquent, the ratio would have to be adjusted accordingly. During interview, however, the purged contracts were said to be "completed."

Sources interviewed estimated the delinquency listing to be anywhere from 60-65% in error. It is noted, however, that 732 of 1903 contracts listed as delinquent were in fact completed. This points to an error rate of closer to 38%. The size of the sample taken (10%), the mitigating quality of averaging and the fact that the sample was taken after a review and purge, should provide some measure of accuracy to the data presented. The data was structured in the following format:

FSCM
TOTAL (OPEN) CONTRACTS
TOTAL VALUE
DELINQUENT CONTRACTS
DELINQUENT VALUE
% DELINQUENT
MAX VALUE/DELINQUENT K
MIN VALUE/DELINQUENT K

Delinquency data thus obtained is as follows:

A) Total number of open contracts sampled	:	4,603
B) Total number of contractors involved	:	200
C) Total value of all open contracts sampled	:	\$101,194,665
D) Average value of open contracts sampled	:	\$ 21,985
E) Total value of all delinquent contracts	:	\$ 29,204,196
F) Total number of delinquent contracts	:	1,649
G) Average value of delinquent contracts	:	\$ 17,710
H) Overall delinquency rate	:	35.8% ¹

¹A reduction of the overall (sampled) delinquency rate by the determined error of the listing (38%), shows an overall rate of 22.2% which is comparable to the figure proposed in Section A of this chapter.

- I) Individual Contractor average % delinquent : 53.9%
- J) Delinquent contract value as % of the total: 29%
- K) Average high value delinquent contract : \$ 88,393
- L) Average low value delinquent contract : \$ 3,722
- M) Highest dollar value delinquent contract : \$ 1,123,622
- N) Lowest dollar value delinquent contract : \$ 5.00
- O) 68 Contractors were 100% delinquent
equating to 34% of the sample
- P) Delinquent contracts in (O) above were
valued at: \$3,095,343

It is easy to see, from the sample data, that the procurement managers task is anything but clear cut. While the average delinquent contract is valued at over \$17,000, the range may vary from as low as \$5.00 to over \$1,000,000! How does one approach 66% of the contractors that are from 1% to 99% delinquent as opposed to those who are 100% in the red? The problem is real enough, however. When nearly 30% of the value of all stock contracts are in a delinquent status, something is amiss. How then, does management go about developing a strategy to deal with it? First, the manager needs to acquaint himself with some of the more overt characteristics that will provide him with an idea of which avenue to choose to obtain the most cost-effective solution to the delinquency problem.

A review and analysis of in-house Production Progress Reports, DD FORMS 1654, complemented by a screening of DCAS generated, delinquency related correspondence, and parallel

personnel interviews, yielded the following characteristics of the delinquency problem:

- A sample of 200 DD FORMS 1654 was conducted to ascertain:
 - Whether or not DCAS was consistently appraising the SPCC administrator of the problem early enough to allow for problem-avoidance actions to be initiated.
 - The reasons for the delay.

Results:

1. In 90% of the cases, the DD FORMS 1654 were processed on the basis of actual delinquencies. In only 20 of 200 notices, did DCAS give advance warning of anticipated delinquency. In most cases, the first notice was received well after the contract had gone delinquent. It was found, perhaps because of a backlog of work, that the "anticipatory" notices were not acted upon once received. In fact, most individuals interviewed were not aware of the actual/anticipated blocks on the form. Personnel supervisors appear to be unaware of what action is being taken on the received notices. Perhaps the reason for inaction rests with the recommendation for action advised by DCAS. Predominantly the recommendation is "leave delinquent."

2. Reasons for delinquency, as shown on the DD FORMS 1654 are:

- | | | |
|----------------------------------------------|---|-----|
| A) Poor production, planning and control | : | 33% |
| B) Inadequate purchasing and vendor control: | | 44% |
| C) In-house manufacturing problems | : | 7% |
| D) Financial difficulties | : | 2% |
| E) Government delay | : | 14% |

As noted in Section B of this chapter, the biggest contributors to the delinquency problem, 77% as shown above, are poor production, planning and control and poor vendor control. A sample of DCAS input for SPCC's Contractor Experience List, seems to bear this out. Sixteen contractors were sampled, some with delinquency rates as high as 100%. Reasons for delinquency were:

- A) Lack of vendor control : 30%
- B) Internal scheduling problems : 35%
- C) Accepting work above capacity, overloaded: 35%¹

Correspondence from DCAS pointed to another interesting characteristic of the delinquency problem that concerns the problem-avoidance phase of contract formulation. According to DCAS, and this is a view shared by many individuals interviewed, SPCC does not conduct or request pre-award surveys with any regularity. In virtually every piece of correspondence generated by DCAS, relating to a particular SPCC contractor, the topic of pre-award survey is discussed. It is the belief of DCAS that contracts are being awarded without the benefit of pre-award surveys and, in some cases, without so much as an inquiry as to the probability of satisfactory performance on the part of the prospective contractor. This should be of particular interest to the procurement manager because downstream problems are often the result of an inappropriate award

¹Accepting work above capacity should be considered part of poor scheduling and control.

(taking into consideration the fact that, in some cases, award is likely to be made even in the face of a negative responsibility determination simply because no one else exists to do the job).

Finally, some geographical data may be of interest to the procurement manager, especially as it relates to focusing strategy development and the use of liquidated damages. It has been ascertained that five states:

- A) California
- B) New York
- C) Massachusetts
- D) New Jersey
- E) Pennsylvania

account for nearly 60% of the dollar value of all actions processed by SPCC. Four of these states represent 65% of all contractors listed on the Contractor Experience List.

They are:

- A) California
- B) New York
- C) Pennsylvania
- D) Massachusetts

The reader should consider the effort made and results obtained by LCDR Feltes at DCASMA Chicago. Similar studies made at the various DCASMA's associated with the above states might yield similar beneficial results. It would also be advised that the procurement manager become familiar with the liquidated

damages provisions of the above states in the event the use of such leverage, after a review of the next chapter or other related work, proves appropriate.

D. MANAGEMENT CONSIDERATIONS: RECOGNITION AND RESPONSE

Armed with at least a modest appreciation of the particulars that are related to the delinquency problem at SPCC, the next logical step would be to assess what is being done to correct it. It is evident from the statistics that there is a real and continuing problem. How then, does management appraise itself of the delinquency situation and what tools and techniques are used in the problem-solving process.

There are two major information sources internally available to the procurement manager, that allow him to gather relevant delinquency data:

- A) The Contractor Delinquency Listing (CDL)
- B) The Contractor Experience List (CEL)

The CDL is a computer generated status list (see Exhibit H), provided to the Contract Management Division each month.

The listing details:

1. The contractor by FSCM, name and address
2. A columnar breakdown of all contractor/SPCC contracts currently in a delinquent status
3. A summary total of all active contractor contracts with SPCC, along with their total dollar value
4. A summary total of all currently delinquent contracts, along with their total dollar value
5. Contractor total percent delinquent.

The CDL is SPCC unique. It was developed by SPCC, for SPCC, and is not used at any other activity. Seventy-five percent of the listing's input comes from UICP, automatically generated, small purchase award data. The remainder, including large contract award data and contract modification information, enters the system manually. The system utilizes Military Standard Contract Administration Procedures (MILSCAP) transaction data. The computer program used for the CDL, executes a number of logical transactions as it evaluates its data base to determine delinquency. The Contract Management Division, has established a 60 day delinquency "gate" for the program's use. This 60 day gate is added to each contract required delivery data (RDD) to allow for any slack in the reporting process. For example, a contract may be complete (i.e., goods are delivered) but because of paperwork lead time, clerical errors or routing delays, the PK9 card used for payment verification input may not have been processed and therefore the contract may be listed as late. The 60 day gate is used as an aid to purify the list of these short duration administrative deficiencies. Unfortunately, because of this necessity, each contract that is actually delinquent, has been so for at least 60 days before it is entered on the list for the first time. MILSCAP PJJ cards are also used by the system to verify shipment. Comparison is made by the system, of the PJJ card quantity shown as shipped and the total contract quantity listed in its data base. Corrections (updates) are then automatically made to the CDL. The use of the word "Delinquency"

in the title, is a misnomer, at least as it relates to the definition of delinquency proposed in Chapter I of this thesis. The delinquent contracts used in Section C, above, for statistical sampling, were verified to be actually delinquent according to the definition in Chapter I. The CDL, however, contains contracts that are both "delinquent" and "delayed" but does not differentiate between them. The CDL simply notes them all as delinquent. This is a negative aspect of the list, because a substantial amount of time must be spent "debugging" the list to separate delinquent contracts from those that are late for other than contractor fault.

A single GS-5 is assigned to review and update the CDL each month. Since there are over 2000 individual contractors on the list, the review is generally limited to, perhaps 100-150 contractors. The system is very slow to purge non-relevant data from the listing, so this employee enters into a lengthy process of checking computer records to see if contract payment has been made, verifying whether or not specific stock items have been received and calling contractors themselves to obtain personal status on listed contracts. The GS-5 also reviews the actual contract files for status information, calls the cognizant DCAS office and talks to contract administration personnel on the floor, who may be a party to status information not yet obtained. This entire, onerous, time consuming process is designed to compensate for computer deficiencies. The computer simply does not provide for continuous updating of

the CDL, such as removing completed contracts from the list and segregating delinquent contracts from others where the government may have a hand in the delay. This is the reason many individuals feel the CDL is 60-65% in error. As such, the usefulness of the CDL is marginal at best. Branch supervisors do not use the CDL. One branch supervisor had no idea that the CDL even existed. Additionally, the CDL does not contain spot buy action data, which represents virtually 50% of the work performed by the Contract Management Division and in itself represents work that is highly susceptible to delinquency.

The CDL, in sum, is of little effective use as a management information source. The listing is infrequently updated and therefore highly susceptible to error. It is an information offshoot of a much larger, non-procurement dedicated system and as such is not designed to provide the type of accurate, comprehensive information needed by the procurement manager. At best, it may be considered a reference guide for supplemental data on the delinquency problem but it is not an effective delinquency management tool.

A second delinquency management information source is the Contractor Experience List (CEL). A Contractor Performance Board, at SPCC, reviews contract history data of potential or actual problem suppliers. If a particular contractor's past performance is such that a careful consideration and review must be made on him prior to award,

the firm is placed on the CEL. Prior to making an award to a firm listed on the CEL, the buyer must obtain approval of the action from the Contractor Performance Board (except for actions below \$10,000).

The CEL is an excellent tool that provides the procurement manager with comprehensive data on contractor performance and a vehicle through which award may be withheld (within reason) from historically poor performers. Excellent input data is also received, upon request, from DCAS regarding firms recommended for inclusion on the CEL. The DCAS letters provide the procurement manager with detailed statistical and narrative information regarding the firms in question. The sum of material available to the procurement manager from the CEL process is excellent and useful but there is a gap left in this information process where the CEL ends.

The Contract Performance Board meets but once a quarter (unless directed otherwise). The CEL is reviewed and updated at this time. Following the October 1982 quarterly update, the CEL was changed as follows:

Firms recommended to be retained on CEL:	20
Firms recommended to be added	: 14
Firms recommended to be deleted	: <u>4</u>
Net:	30

Although the CEL represents the most consistent offenders, it provides for only about 1% of all SPCC contractors that are, or have been, delinquent. The board simply cannot, in the space of time available to it, review and advise on each and every delinquent contractor, so there is a gap where the

review process ends. Unfortunately, the CDL takes up very little of this slack. This leaves the procurement manager with a single, efficient, though limited source of delinquency management information. The bulk of real-time delinquency data is not available to him. Instead, he must rely on a problem-solving formula that combines exception management and dedicated item support.

There is no doubt that the majority of delinquencies are handled via the exception process. A scenario that provides an example of why this is so is as follows: A contract has been awarded by SPCC and as noted in an earlier section of this chapter, responsibility then shifts from the buyer to the administrator. Since performance has just been initiated, the contract administrator has no need to take action on the file so it passes along to the central file for temporary storage. The awardee was a sole-source contractor. Even though better judgment dictated otherwise, the buyer had to make award to this firm because no one else was available to do the work and the item was badly needed. A few weeks into the contract, the contractor realized he had over-booked his production capacity and began to fall behind on his Navy work. From past experience, the contractor was certain that if he said nothing, the Navy would not even know he was running behind. DCAS, after nearly 90 days delinquency (as is the noted reporting lead time for DD1654's) submitted the first "actual" notice of delay in production via a DD Form 1654.

Due to the immediate needs of an enormous workload, the notice was overlooked, then filed to be worked on later. At DCAS, the industrial specialist, facing the same type of workload, was assured by the contractor, after repeated inquiries, that his earlier overload had bottomed out and he was now back on schedule. The industrial specialist noted this on his next DD Form 1654 to the administrator. Since he was too busy to check personally, he decided to rely on the contractor's submission. He therefore recommended "leave delinquent." The administrator, absent a desire to add more work to his already full schedule, complied with the DCAS recommendation. The required delivery date (RDD) came and went. The contract had shown up on the CDL a little earlier but had been one of nearly 2000 on the list. It drew little attention. The contractor was not on the CEL. The contract continued to lapse until the item manager finally realized he had not received his material and decided to call the Contract Management Division. The exception had been made. From this point on, once visibility had been obtained, management attention was directed at that particular contract, the problem was solved and the material was received.

The above example of exception management is based on a real case, one that is not considered unique. The problem is visibility and dedicated management attention. This particular aspect will be discussed in the next chapter. The point to be made, however, is that management by exception, because of

the paucity of effective methods and tools available to the procurement manager, has preeminence over all other delinquency problem-solving techniques.

The other part of the problem solving formula, available to the procurement manager, is dedicated item support. The External Acquisitions/Contract Expedite branch serves this function. The branch monitors contractor performance on high interest contracts and conducts expedite/follow-up actions to ensure timely delivery of contract material. Although the branch is assigned other expedite/delinquency related tasks, research reveals that the scope of the response is limited. Such lofty sounding responsibility assignments as "Analyses, evaluates and initiates appropriate actions to resolve delinquencies utilizing the contractor delinquency output from the CSR" [Ref. 17] is merely the work of a single GS-5 updating the CDL. Other delinquency related tasks are performed here but they are primarily related to specific programs or projects such as SHIPALTS, Selected Item Review (SIR), or high level review of stock items for SPCC. Exception management enters the process here also. Much of the delinquency related response revolves around requests for action from customers. Branch personnel tend to work along the lines of item delivery, where the contractor is late or when delivery has to be moved up or where the monitoring of progress of an item is desired. The concept of management that directs attention to specific variables or sets of variables in the procurement equation works well for what it is tasked to do. The problem lies in

the fact that wherever there is a focus of attention, there is a narrowness of scope. Attention may be dedicated to a select grouping of items operating around a single variable such as delivery or price but without sacrificing accuracy and efficiency, that same attention cannot be applied over the greater body of items and the full set of variables. Some other, more enduring technique or set of techniques must be used.

To summarize, it must be said that management at SPCC recognizes and is attempting to respond to the problem of delinquency. The problem has not been masked or hidden but given the degree of management attention that displays a strong desire to move toward the most cost-effective, enduring problem-solving strategy. Response to the problem has been somewhat muted by the inadequacy of the tools available and the workload generated inertia that causes the procurement manager to rely on means and methods other than those he would no doubt choose to employ. There are, however, other limits imposed upon the procurement manager's ability to respond to the delinquency problem, limits that are at once recognizable and approachable yet difficult to grasp and at times deeply imbedded in the system itself. With enough effort and disregard to cost, any given source of management information can be updated, improved or even developed to provide the manager with more realistic, accurate and up to date information. What desire and money may not be able to

do, however, is remove some of the more system entrenched impediments to delinquency problem solution. The next section investigates this particular question.

E. MANAGEMENT CONSIDERATIONS: LIMITATIONS

Perhaps the single greatest limit imposed upon the procurement manager's ability to effectively deal with the delinquency problem, is workload. Management must first address workload when entering into resource allocation decisions, when determining how to approach problem-solving situations and when deciding how best to achieve mission objectives. Chapter II, Section E, illustrated the workload currently faced by the Contract Management Division. The workload may be summarized as being composed of:

A) An enormous volume of work to be accomplished as the result of increasingly complex weapons systems and an expanding Navy.

B) A level of staffing inadequate to provide the degree of attention necessary to properly perform all work.

C) A substantial diversity in the type of work to be performed, the time frames necessary for proper performance and the manner in which the work must be accomplished.

These workload characteristics create a form of inertia that must be dealt with by each individual worker. Rather than being able to apply a concise, methodical approach to the work at hand, the worker finds himself constantly responding to new developments which draw him farther and farther away from

any form of structured performance. A rather crude but illustrative analogy would be to view performance of stock and in-use item procurement administration as a simple linear regression. The "true" regression would represent a structured level of performance characterized by:

A) A prioritized, sequenced approach to existing and incoming work that balances the need to complete work in process with the level of attention that must be applied to incoming requirements.

B) A continuous assessment of cognizant procurements consisting of performance, quality and progress updates which determine the degree of dedicated attention the administrator must apply to ensure all contract requirements are met (administrators are currently assigned cases on the basis of level of difficulty and experience level. Cases are further divided alphabetically, by contractor name).

This type of structured performance would assure the manager that his workers are processing routine work in the minimum amount of time allowing for proper analysis and accurate response. It would mean that higher priority work is provided for first, but organized in such a way that it is not performed at the exclusion of all other work. Finally, it would mean that the administrator, through continuous review and update, is ahead of potential problems because the process automatically highlights areas where contract performance is deficient. Problems such as delinquency would get the amount of visibility and dedicated attention necessary for its solution.

In reality, the process is characterized, almost exclusively, by reactionary response. An enormous volume of highly diversified work has been imposed upon, what this research reveals, an inadequately sized staff comprised of a less than optimum number of senior, more experienced workers. Each worker is caught up in the inertia of having to respond (react) to the needs of their cognizant procurements, as they come up. This reactive process builds upon itself. Each problem, or action demands the time and attention of the worker. As more and more actions arise, backlogs begin to dominate and the workers attention must be divided among a large number of requirements rather than being dedicated to just a few. To simply process the work and clear it from one's desk, all the virtues of good performance (i.e., accuracy, completeness, comprehensive review and analysis, continuous updating) are diffused or diluted because they must be applied over a large spectrum of actions in a relatively short period of time. Problems are not solved, but instead, are attacked through a series of very marginal adjustments. It is the essence of "muddling through."

Instead of residing along the line of true regression, worker performance may be viewed as a process of continual response to deviations both above and below the true regression. The deviations take the form of reaction to the unending flow of incoming requirements or needs, never allowing the worker to proceed along the optimum path. Therefore the best "fit", the line that corresponds to the level or nature of worker

performance necessary to cope with the existing workload, varies dramatically from that which represents the optimum approach for delinquency problem solution.

This, then, is the workload generated limitation management must deal with. The disparity between necessary performance and actual performance will force the procurement manager to redefine his delinquency problem-solving strategy and explore other alternatives that are tailored to take into consideration the capacity and limitations of his workforce. In the absence of increased staffing and/or reduced workload, this limitation will persist and the optimum problem-solving strategy will be beyond the manager's grasp.

A second limitation was discussed in depth, in Section B of this chapter. The limitation has to do with the inflexibility of public entities in dealing with a changing environment. It is a rare case when a public entity is granted enough autonomy to establish its own course of action in dealing with its environment. The need for oversight of the expenditure of public funds, has, over the years, created an enormous, cumbersome array of statutes, policies, regulations, executive orders, directives, standard operating procedures and the like, which have, despite their good intent, promoted a devolution of good business judgment. The procurement manager finds himself accountable to the public at large, via statute and so on, for the promotion of social, political and economic objectives that take precedence over all other business considerations. These objectives, plus the overriding concern for equanimity

at the expense of good judgment, have served to mitigate the potency of a great number of remedies available to the procurement manager. For example, flexibility in source selection is limited, in the case of formal advertising, because the contracting officer is forbidden, in the absence of a determination of non-responsibility, to award the contract to other than the low bidder (assuming the bidder is responsive). The Comptroller General has ruled that the Contracting officer, in such cases, must make award to the lowest responsible bidder. It is quite easy for a small business to overturn a determination of non-responsibility by applying for a Certificate of Competency (COC) from the Small Business Administration (SBA). Although the SBA assumes responsibility for performance after the issuance of a COC, it does nothing to mitigate the impact caused by the contractor's intransigence, if such occurs, after contract award. Nearly 50% of all SPCC contract awards (excluding modifications under \$10,000) are made to small businesses, the majority via formal advertising! Similarly, the contracting officer has little room to maneuver if he suspects a buy-in. "Should cost" determinations are rarely made in stock and in-use item procurement. In the absence of a solid pre-award survey determination that actually can challenge the contractor on what performance is likely to cost (the onus is on the Navy to prove the contract cannot be performed at the quoted price. It can rarely do so without being heavily challenged by the contractor) the contracting officer can do little except wait until performance becomes

delinquent. In addition, the fairness doctrine has given prospective contractors great leverage in influencing the source selection process in court or at the General Accounting Office. "Contracting Officers seem to have become more and more conservative because of the ease with which an unsuccessful offeror can lodge a protest. In response to this, and in an effort to increase objectivity, source-selection criteria have become more numerous and detailed, so detailed in fact, that we may fast be coming to the point where the method begins to overshadow the objective" [Ref. 18]. In, A Report on the Feasibility of Using Liquidated Damages Clauses and Monetary Incentives in Stock Procurement Contracts. Captain J.H. Mayer, SC, USNR-R, states that termination proceedings and a refusal to award based on poor prior performance represent part of "an effective arsenal of weapons to show that the Navy wants a stock delivered when promised by the contractor" [Ref. 19]. This thesis submits that this "arsenal of weapons" is severely diminished in impact because of the procurement managers inability to be flexible in choosing the time, place and manner of their use. One final example will make this point. Would it be cost effective and beneficial to the Navy to begin termination proceedings against a sole source contractor who is two months late in delivering, a long lead time to produce, critically needed item that only a single contractor makes? If defaulted, how long will it take to reprocur the item? Who will provide the item the next time? How much will

the whole administrative process cost, recognizing that the average value of a single delinquent contract is just slightly above \$17,000? Can this be considered an effective weapon?

Other factors which may be said to limit the procurement managers ability to deal with the delinquency problem are:

A) The dynamic forces of this unique procurement environment, by their very nature, tend to upset any attempt to instill orderliness upon them. Peculiar requirements, spot-buys, volume inconsistencies, contractor-internal deficiencies and conflicts of objectives, among others, create dysfunctions that defy management control and foster problem formulation. This limitation, along with inflexibility, changing needs and policies of the sovereign, lack of close contractor relationships, and lack of contractor commitment are system embedded limitations that are difficult and maybe even impossible to change. Like workload, management must tailor its problem-solving strategy to take these limits into consideration.

B) The large number of sole-source requirements effectively limit the degree of leverage the procurement manager can apply against delinquent suppliers. Sole source procurement appears to be a function of the uniqueness of the procurement environment, primarily because of the type of material required. The procurement manager can have little effect on this. The "got to have it now" attitude of most customers places fulfillment of the need above all other considerations. This affords the procurement manager little latitude when dealing with the supplier, especially where delinquency is concerned.

There are other limitations not discussed in this section. Some are obvious, some not so. The above discussion, however, adequately illustrates the plight of the stock and in-use item procurement manager as he seeks to confront the problem of delinquency. There appear to be far more limitations imposed upon his problem-solving efforts, than there are tools or techniques available to benefit him. It is certainly not a clear cut, fixed dilemma. As this thesis has repeated over and over, the process is dynamic and changing. There may at times be latitude where a moment ago there was none, flexibility where there was once no movement and orderliness where there was only disorder. In the long run, however, the delinquency management environment is filled with limitations that force the procurement manager to continuously reassess the situation and tailor his strategy, in light of those limitations, to best meet his end objectives.

F. PERSPECTIVE: THE PROBLEM AND THE ENVIRONMENT, ALL THINGS CONSIDERED

The Chief of the Contracting Office, in a research interview, noted that the delinquency problem at SPCC was complex and outwardly deceiving. The accuracy of this statement is evident from a review of the preceding sections. It is truly a perplexing problem. To view delinquency as severable from the characteristics or dynamism of the larger environment would be a gross error. To try to pin down the problem from a review of the statistical parameters is equally mistaken. It would be akin to viewing an iceberg, where the largest and

most important dimension is hidden from view. There is no single solution to the problem. In fact, there may be no solution to it at all. Perhaps the best that can be hoped for is a greater understanding of all aspects of the problem which will lead to the development of tools and techniques that will reduce it to more than just an acceptable level.

If nothing else, this chapter should show that the delinquency problem is interwoven into every aspect of the stock and in-use item procurement process. Some parts of the problem are firmly entrenched in the very fabric of the process itself. These "roots", if they may be called such, may never be subject to change or if so only very marginally. The procurement manager's concern, then, should be with approaching those parts of the problem that are susceptible to change. Chapter IV provides a discussion of some of the ways this might be accomplished. The author recognizes the complexity of the problem and realizes there is no panacea of cures for it. What is hoped, however, is that a presentation of carefully weighed considerations may provide the procurement manager with a method not yet conceived or of a thought not yet provoked, that will lead him to a more effective delinquency problem-solving approach.

IV. ANALYSIS AND CONSIDERATIONS

A. THE PRE-AWARD PROCESS

If the old adage, an ounce of prevention is worth a pound of cure, has any merit to it, we must assume that the pre-award phase of a contract life cycle is, perhaps, the most important of all. It is during this period of time, when the rights of the government are whole, that the procurement manager can exercise the greatest amount of influence over the future well-being of the particular contract. The manager, during this phase of contract formulation, should be able to make certain decisions regarding the level of visibility and manageability the particular requirement will necessitate, during its life cycle, that will help him monitor and control contract performance throughout.

Early visibility is the key denominator in the procurement manager's pre-award decision-making strategy. The manager must ensure that his contracting officers pay particular attention to important performance indicators which will provide some form of insight as to the level of management required for each particular contract action. Of initial concern should be the prior purchase history of an item. If prior procurement has been absent any sort of price competition, the contracting officer should look deeper to see if there are other indicators that might point to potential performance problems and hence delinquency. Previous terminations for

default or convenience are, of course, very overt indicators of a troubled past. Other relevant indicators the contracting officer should be aware of are:

A) Prior contract delinquency problems

B) Past waivers granted (including a review to ascertain the nature and composition of the requested waivers. In Chapter III, it was shown that Target Corporation was very effective at shifting responsibility for deficient performance onto the government simply by the way they worded their waiver requests).

C) Previous negotiated schedule extensions

D) Prior deviations from specifications requested

There are, in fact, two reasons for exploring and analyzing such performance indicators. First, past performance is quite commonly a very accurate measure of future performance. The contracting officer must, on the basis of the evidence before him, make a determination as to the level of management attention required to see the particular contract through to completion. Second, the contracting officer must make an effort to assure himself that poor past performance on the part of a given contractor, was not in fact caused by forces associated with the adequacy of the government's own procurement performance. Quite often, specification inadequacies or deficiencies, technical data package irregularities and other requirements package problems continue on from procurement to procurement, sight unseen, except in the detrimental effects

imposed on contractor performance. To avoid unnecessary delays, litigation and performance vagaries, the contracting officer must ensure that the government's requirement is accurate and concise.

The high level of sole-source requirements at SPCC put a damper on any sort of market analysis that may be performed by the contracting officer. Nonetheless, knowledge of the characteristics of a given, competitive market, presents very significant insight as to the potential performance of its participants. Signs of a depressed market with a number of active competitors should lead the contracting officer to make contingency plans for a potential "buy-in". A buy-in, on the part of an undercapitalized, under-financed firm, is a strong indicator of probable performance failure and therefore, suggests a high probability of future delinquency.

As noted earlier, 50% of SPCC's contracts are awarded to small businesses. Data points to a disproportionate number of small business performance failures as contrasted to that of larger firms. It is recognized that small business participation cannot and should not be curtailed to any great degree, however, the contracting officer must appraise himself of the risk of failure attendant with particular small business contracts. Contingency planning, visibility and resource allocation decisions should be tied to the contracting officers recognition of the increased risk of doing business with a small concern.

The intent of the above, is to inure in the contracting officer, a desire to obtain every single bit of performance relevant data possible. This will allow him to effectively allocate his management resources (level of attention and administrative costs considered) so as to provide the highest degree of visibility possible to potential delinquent contractors. If poor performance is expected, this knowledge will enable the contracting officer to set the level of management attention necessary to adequately monitor and control the contract through its life cycle. It will allow him to provide early warning advice to interested program elements, to allow them to develop contingency plans of their own. Coordination between these offices will enhance their surveillance capability and provide for a measure of understanding in the event of adverse, future contract performance developments.

A valuable extension of the contracting officer's contractor information gathering capability, is the pre-award survey. It was established in Chapter III, that SPCC only partially takes advantage of this most useful tool. DCAS was adamant in its request that more pre-award surveys be performed on contractors who have shown inconsistency in past performance or who are suspected of "buying-in". It is recognized, that in many cases, even though the contractor has exhibited poor past performance, the small dollar value of the action plus its attendant minor level of criticality do not warrant the cost of a pre-award survey. This is a fact of the unique

procurement environment that must be accepted. Some of these low dollar value, non-critical requirements, no doubt add to the delinquency problem. In these cases, the attendant application of intensive management, to preclude performance slippage, is not warranted in the face of the costs associated with such surveillance. The benefit of committing additional resources to actions such as this, is far outweighed by the costs of such an endeavor. Of course, lack of management attention of such a small item, may lead to delinquency, which in turn, because of its non-availability, causes the item to become more and more critical on the basis of need. As this happens, the benefit derived from the utilization of enhanced management resources more appropriately matches the costs involved in doing so. This is an SPCC dilemma that is not likely to be solved.

Although the Defense Acquisition Regulation (DAR) specifies that a pre-award survey should not be performed on awards of \$25,000 or less, it does provide that a pre-award survey may be performed on small businesses which may be candidates for a Certificate of Competency (COC). Since any small business award in excess of \$10,000 is a potential candidate for a COC, the DAR leaves at least some room for contracting officer judgment in weighing cost-effectiveness against the risk of doing business with a small concern. In many cases, once received, a pre-award survey may not provide information strong enough to support a negative responsibility determination, yet it may provide information that points to probable

down stream performance problems. In this case, the contracting officer should utilize the information to formulate a plan to increase the visibility of the contract so that originating problems may be quickly observed and promptly dealt with.

Unfortunately, and as mentioned earlier, in Chapter III, DOD has provided little flexibility to the contracting officer, when dealing with noted poor performers, in the source selection process. It is not at all uncommon to find contractors reaping the benefits of new contract awards even though their earlier performance was basically unsatisfactory. "The situation is in stark contrast to that of the private sector, where organizations generally maintain a list of preferred vendors and suppliers. The 'preferred list' is primarily determined by experience from previous contracts and frequently is the major influence in the determination of future awards" [Ref. 20]. In DOD procurement, a contractor must be given the right of due process if the government prevents him from competing for contracts. "Any law that would abridge a prospective contractor's right to compete, other than the requirement that he must be responsible, would bring into question the integrity of the process as it now exists" [Ref. 21]. Therefore, it is quite unlikely that such measures as past performance would legally be upheld as a reason not to award a contract, unless of course the contractor was found to be non-responsible.

Absent the leverage and flexibility necessary to deal with poor performers in the source selection process, the contracting officer must seek alternative means to monitor and control problem contracts through their life cycle. Duane Knittle and Daniel Carr, in their study entitled, Detection and Avoidance of Contractor Defaults, present a very interesting system of contract monitoring and control that appears to have substantial applicability to the delinquency management problem at SPCC. The primary tool used is a Contracts Characteristics Matrix, shown in Figure 1. Criticality indicators, based on a combination of the item's criticality designator and dollar value, are displayed along the vertical axis. The horizontal axis reflects the number of adverse predictive indicators which have been identified as being associated with the particular procurement. (SPCC can, no doubt, refine these categories to reflect specific combinations of indicators which are prevalent in their particular operations). Predictive indicators, although referred to earlier, are presented here, in part, for illustration:

- A) Purchase History
- B) Previous Delinquencies
- C) Current Instability
- D) Past Waivers Requested

As the authors note, assignment of an action to the appropriate cell of the matrix, will provide a structural basis for contract management. Certain combinations of

Pred. Crit.	0	1	2	3	4	5	etc.
Ah							
AL							
Bh							
BL							
Ch							
CL							

Legend: A,B,C - criticality designators
h,L - dollar value categories
h - \$100,000 or over
L - less than \$100,000
0 - no adverse predictive indicators
1 - any one adverse predictive indicator
2 - any two adverse predictive indicators,
etc.

Figure 1. Contract Characteristics Matrix

criticality and predictive indicators suggest an intensive management effort. Conversely, and in accord with the discussion in Section D of Chapter III, certain combinations suggest only exception management. The authors go one step further, and provide a Management Application Matrix, Figure 2, with cells corresponding to the possible combinations reflected in the Contract Characteristics Matrix. By locating the corresponding cell in the Management Application Matrix, the authors feel the contracting officer should be able to determine if:

Pred. Crit.	0	1	2	3	4	5	etc.
Ah	F	I	I	I	I	I	I
AL	F	F	I	I	I	I	I
Bh	F	F	F	F	F	I	I
BL	E	F	F	F	F	F	F
Ch	E	E	E	E	F	F	F
CL	E	E	E	E	E	F	F

Legend: I - Intensive Management
F - Further Analysis (a function of judgment and Resource Availability)
E - Exception Management

Figure 2. Management Application Matrix

- A) intensive management should be applied
- B) exception management is sufficient
- C) further analysis is required

This type of management tool serves as a vehicle for more systematic workload prioritization. Of course, personnel restraints may dictate expansion of the standard categories for exception management. Also, as presented by the authors, command experience may facilitate greater standardization, thus reducing the number of "F" cells in the matrix. The point to be made, with SPCC in mind, is the fact that buyer/administrator split and workload considered, this is an exceptional tool designed to help management monitor and control suspect contracts without extreme administrative

cost or disruption. Prepared by the contracting officer or his buyer and passed along to the Contract Management Division, this (perhaps) standardized form, prepared for each procurement action would go a long way toward promoting an efficient, effective system of contract surveillance, thereby reducing delinquency through increased visibility and management attention. The idea behind such a management approach, is to minimize administrative burden while maintaining an acceptable level of performance visibility. A suspense file should be established by the cognizant administrator, for each contract, to insure significant performance milestones are monitored. To conserve resources, only the most significant milestones should be monitored. If resources permit, a second set of milestones should be identified and monitored. In doing so, the administrator can effectively atune himself to meaningful performance indicators. Passive indicators, as noted by the authors, can be defined as the absence of evidence that a performance milestone has been completed (i.e., the absence of a DD Form 250 Material Inspection and Receiving Report). The receipt of a Delay in Delivery Notice DD FORM 375-2, would be an example of an active indicator of performance difficulties. The administrator's suspense file is aimed at increasing the administrators sensitivity to passive indicators. Ideally, SPCC's ADPE system would be the best source of a real-time suspense file, providing daily or weekly passive and active indicator input to management. In the absence of such a system, a manual file must suffice. This

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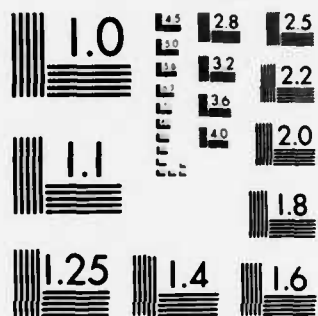
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thesis proposes that such a system will provide an efficient, cost-effective tool for managements use, in the delinquency problem-solving process. Again, the key concept is visibility. Visibility provides for a heightened awareness of the progress of a given contract and thereby creates a vehicle for the application of increased management attention which should, within reason, mitigate problem effects before they become unmanageable.

Notwithstanding the acknowledged impediments of personnel ceilings and job classifications, time and cost limitations and the staid nature of a long established work structure, a case must be presented for the one buyer/administrator concept. There can be no question, that a separation of buyer from contract, following award, contributes to a lack of overall commitment to ensure timely, proper performance of all contract requirements. There are innumerable reasons why the buyer should have full responsibility and accountability for his contractual actions, from initiation to contract completion. Many of the reasons were discussed in Chapter III. Before closing out this section on pre-award considerations, it would do well to briefly examine this concept once more.

A buyer should have both a strong business and technical knowledge. He must understand purchasing principles and their applications as well as have a general understanding of the business functions involved in and related to procurement. He must also have a firm grasp of the technical details of

materials he procures and their manufacturing processes. Because of his status among suppliers and his intimate knowledge of the contract, the buyer can obtain more effective results from suppliers than can a person of lesser status in the organization. If a buyer is provided full responsibility for each of his contracts, he will make it a point to fully participate in each phase of the performance cycle. Likewise, having full responsibility and accountability for all his buys makes the job of measurement and control of his performance much easier. In this type of arrangement, as noted in Chapter III, the buyer has full visibility of outgoing requirements while acquiring status and monitoring performance of existing contracts. This presents the buyer with a greater amount of leverage to employ against intransigent suppliers. Control and therefore continuity of relationships is maintained because there is no gap in the process since the contract is not being transferred from one person to another. Much can be said for cross-training administrators to eventually take over buyer/administrator assignments, thereby increasing the number of buyers, decreasing the number of requirements each handles and in the long run providing for a more responsible, responsive organizational segment. Of course, much of the routine work must still be performed by another group, commonly referred to as "expeditors" in industry. An effective work structure would be highlighted by the assignment of a single expeditor to each buyer (or buyer

group). The expediter would do the work required by his buyer with the buyer retaining full responsibility and accountability for his work. This would minimize the division of responsibility now experienced at SPCC, put more leverage and power into the hands of individual buyers and present the organization with the type of activity-industry interface that has been so successful in the private sector.

Whatever means are employed, it is a certainty that aggressive contract management in the pre-award phase, is the best guarantee an organization can have, for satisfactory contract life cycle performance. Management must be aware to develop, control and monitoring tools, that not only provide for the best utilization of scarce personnel resources, but also give the degree of visibility necessary to selected contracts so as to ensure an adequate level of management attention is employed. Finally, an assessment of the current work structure should be made, to take into consideration the maximization of benefit that may be gained by applying the one buyer/administrator concept.

B. LIQUIDATED DAMAGES

Often, pre-award management initiatives such as those discussed above, are not enough to prevent down stream performance irregularities, no matter how aggressively they are applied. Such irregularities, which manifest themselves in contractor delinquency, may be ascribed to any number of factors, including those which were discussed in Chapter III.

In the private sector, it has been said that individual firms seek to reconcile the majority of their post-award performance problems by employing extra contractual methods. These methods take the form of personal interaction and reliance on well established, traditional business relationships. These provide the measure of agreement necessary to correct the problem at hand, while standing clear of the use of contractual remedies for as long as possible. Two principle reasons preclude government procurement managers from taking advantage of such beneficial methods. First, the impersonalization of each contractual action, created, in part, by the buyer-administrator split in responsibility, negates all ability to establish meaningful buyer-supplier relationships. Second, the flexibility inherent in the private sector buyer's ability to "step outside" the four corners of a contract, to work on matters of mutual benefit, is absent in the case of government buyers. Government buyers, contracting officers and agents of any sort, are imbued with a procedural mind-set which forbids most effort toward innovation and most definitely confines them to the four corners of their contract. This is not to say that government procurement is dominated by "institutional minds," because it simply is not so. The point, however, is that legal, statutory, political, social and other considerations, force the procurement agent to act predominantly within a well established "response" structure or suffer the possibility of censure if he ventures outside it. Thus, in

government procurement, there is a far greater tendency to rely on intra-contractual remedies to make the Government whole in the face of contractor intransigence.

There are, of course, many remedies available to the procurement manager, in the form of contractually established provisions, which provide so-called "flexibility" throughout the life cycle of a contract. These remedies include:

1. Debarment

This remedy is employed in the case of fraud, anti-trust violations or other offenses which raise a question regarding a firm's business integrity. It may also be used where a firm violates contractual provisions such as the Gratuities Clause or it may be used "for any other cause of such serious or compelling nature affecting responsibility as a Government contractor as may be determined by the Secretary of the Department concerned to justify debarment" [Ref. 22]. With few exceptions, while a contractor remains on the Debarred List, he may not be issued a procurement solicitation nor may he be considered for an award of a prime or subcontract. Debarment usually is effective for three years.

2. Default

In a fixed price type contract, the government may terminate all or any portion of a contract if the contractor:

1. Fails to make delivery within the time specified in the contract.
2. Fails to make progress so as to endanger performance of the contract, or

3. Fails to perform any other provision of the contract. Absent excusable delays, the government may repurchase the required item elsewhere and charge the contractor for excess costs. Flexibility provided to the procurement manager through the use of remedies such as the above, is greatly suspect because of the extreme gravity associated with their employment. It is generally understood that these are remedies of last resort. They are used whenever there is simply no other recourse available. Default, especially, is of little use for delinquency solving because it is far too time consuming and expensive a process to enter into, and it does not provide for expeditious receipt of required material. Default proceedings are usually begun well into the production cycle of the product. Reprocurement simply adds onto the already lost production lead time the material has experienced. Thus, even in the face of extreme contractor deficiency, it is not likely that default would be used, if the item was critically needed and expeditious recovery was paramount.

Other remedies such as:

- A) Public Law 87-653 (Truth in Negotiations Act)
- B) Warranties and Inspection
- C) Changes and Modifications
- D) Stop Work

are classified by reference to the activity to which they relate. Although effective in their own realm of consideration, they have little impact on the problem of delinquency.

What remedy, then, is available to the government, that mitigates the need for extensive, all encompassing solutions as provided by the default provision, yet is effective enough to dissuade prospective contractors from de-emphasizing their government contractual commitments? This thesis proposes that the use of liquidated damages provides such a remedy.

The government has a right to claim damages on breach of a contract by the contractor. There are essentially two types of damages:

- A) Unliquidated Damages
- B) Liquidated Damages

Where there has been no agreement between the parties and no court determination has been made, the damages are said to be not determined in amount, hence unliquidated (the term "liquidate" means to determine by agreement or by litigation the precise amount of indebtedness, damages or accounts). Unliquidated damages come to the fore when there is failure on the part of the contractor, to live up to his contractual commitments, and some form of harm to the government results. The damages essentially flow from the breach and are "measured by the amount of money necessary to make the government whole" [Ref. 23]. This type of damage provision is not preferred because of the extreme difficulty associated with attempting to fix the amount of damages entailed, after the breach.

Liquidated damages, on the other hand, are pre-set in amount by mutual agreement of the parties. They take the form

of clauses incorporated in contracts, which provide that in the event of the occurrence of a specified performance deficiency (such as delinquency), the contingencies in the clause will become active. The courts, in general, while vociferously expounding their intense dislike for "penalty" provisions, have been receptive to the use of liquidated damages as a form of resolution of disputes. The first question asked by the courts has to do with what elements were used in the two party determination of the original damage figure. They are very interested in whether or not the parties were reasonable. If they determine that the liquidated damages provisions serve to do no more than penalize the contractor rather than compensate the government for actual damage anticipated, they will consider the clause or provision unenforceable.

The DAR clause dealing with liquidated damages, as applicable to supply contracts is as follows:

7-105.5 Liquidated Damages. In accordance with 1-310, where a liquidated damages provision is to be used in a supply contract, the following provision shall be inserted as paragraph (f) of the Default clause (7-103.11) and the present paragraphs (f) and (g) of that clause shall be redesignated "g" and "h".

(f) If the Contractor fails to deliver the supplies or perform the services within the time specified in this contract, or any extension thereof, the actual damage to the Government for the delay will be difficult or impossible to determine. Therefore in lieu of actual damages the Contractor shall pay to the Government as fixed, agreed, and liquidated damages for each calendar day of delay, the amount set forth elsewhere in this contract. Alternatively, the Government may terminate

this contract in whole or in part as provided in paragraph (a) of this clause, and in that event the Contractor shall be liable, in addition to the excess costs provided in paragraph (b) above, for such liquidated damages accruing until such time as the Government may reasonably obtain delivery or performance of similar supplies or services. The Contractor shall not be charged with liquidated damages when the delay arises out of causes beyond the control and without the fault or negligence of the Contractor, as defined in paragraph (c) above, and in such event, subject to the "Disputes" clause, the Contracting Officer shall ascertain the facts and extent of the delay and shall extend the time for performance of the contract when in his judgment the findings of fact justify an extension.

DAR 1-310 states that liquidated damages provisions may be used when both:

1) the time of delivery or performance is such an important factor that the government may reasonably expect to suffer damages if the delivery or performance is delinquent, and

2) the extent or amount of such damages would be difficult or impossible of ascertainment or proof. In addition, DAR 1-310 states:

(b) When a liquidated damages clause is used, the contract shall set forth the amount which is to be assessed against the contractor for each calendar day of delay. The rate of assessment of liquidated damages must be reasonable considered in the light of procurement requirements on a case-by-case basis, since liquidated damages fixed without reference to probable actual damages may be held to be a penalty and therefore unenforceable. If appropriate to reflect the probable damages, considering that the Government can terminate for default or take other appropriate action, the rate of assessment of liquidated damages may be in two or more increments which provide a declining rate of assessment as the delinquency continues. The contract may also include an overall maximum dollar amount or period of time, or both, during which liquidated damages may be assessed, to assure that the result is not an unreasonable assessment of liquidated damages.

(c) The law imposes the duty upon a party injured by another to mitigate the damages which result from such wrongful action. Therefore, where a liquidated damages provision is included in a contract and a basis for

termination for default exists, appropriate action should be taken expeditiously by the Government to obtain performance by the contractor or to terminate the contract. If delivery or performance is desired after termination for default, efforts must be made to obtain either delivery or performance elsewhere within a reasonable time. For these reasons, particularly close administration over contracts containing liquidated damages provisions is imperative.

(D) Whenever any contract includes a provision for liquidated damages for delay the Comptroller General on the recommendation of the Secretary concerned is authorized and empowered to remit the whole or any part of such damages as in his discretion may be just and equitable. Accordingly, recommendations concerning such remissions may be transmitted to the Secretary concerned in accordance with Departmental procedures.

Captain J.H. Mayer, SC, USNR-R, in his study of liquidated damages, referred to earlier, in Chapter III, noted that there are deep reservations on the part of legal personnel and contract administrators as to the effectiveness of liquidated damages. Legal personnel feel such provisions are generally unenforceable and administrative personnel believe they will be unable to act on a case by case basis to reasonably estimate damages and monitor the contract. Captain Mayer ascribes a great part of this disaffection as being attributable to the restrictions placed on the use of liquidated damages by the provisions of DAR 1-310 above. A contractor, Captain Mayer notes, could cite DAR 1-310 when fighting the enforcement of liquidated damages while arguing:¹

1) The time of delivery of stock is not such an important factor that it is reasonable to expect that the Navy will suffer damages if a delivery is late.

¹Arguments and answers extracted from: Report on the Feasibility of Using Liquidated Damages Clauses and Monetary Incentives in Stock Procurement Contracts, Captain J.H. Mayer, SC, USNR-R.

2) If damages do occur on a rare occasion, the extent or amount can be ascertained at the time of breach.

3) The rate to be assessed as damages must be established on a case-by-case basis, not by type or category of contract; otherwise it is an unenforceable penalty.

4) The Navy should have considered that the contract could be terminated for default or other appropriate action such as a negotiated reduction in price could be used.

5) The contract should have a maximum amount of liquidated damages.

6) The Navy has a duty to mitigate damages. It must act quickly to obtain performance or terminate rather than allowing liquidated damages to occur or increase. Close administration is "imperative" and wasn't done.

7) Finally, equitable grounds for relief exist because of delays caused by the Navy, inaccurate contract specifications, etc., which warrant the Comptroller General's remitting all or a portion of the damages.

Captain Mayer proposed that there were, in fact, answers to these arguments and that, in appropriate circumstances, there should be no reluctance on the part of legal or administrative personnel to use and enforce a liquidated damages clause:

1) Damages are usually incurred as a result of added administrative expenses and the need to issue spot procurement contracts. Furthermore, there is frequently a detrimental

effect on, or threat to, the operational readiness of military units which should be sufficient to meet argument #1.

2) It is very difficult to ascertain damages under government contracts. Of interest is the following quote on page 1716 of Volume II of Federal Procurement Law (FPL), taken from the landmark Priebe case:

Today the law does not look with disfavor upon 'liquidated damages' provisions in contracts. When they are fair and reasonable attempts to fix just compensation for anticipated loss caused by breach of contract, they are enforced....They serve a particularly useful function when damages are uncertain in nature or amount or are unmeasurable, as is the case in many government contracts....And the fact the damages suffered are shown to be less than the damages contracted for is not fatal. These provisions are to be judged as of the time of making the contract.

3) The regulations do not require a tailor-made clause for each individual contract. The amount must simply be reasonable for the particular agreement at the time it is made (see the quote from the Young case on page 1719 of FPL).

4) Frequently, a termination for default is an inadequate remedy because the production time would have to start over again leading to longer delays. Liquidated damages are designed to avoid lengthy renegotiation and litigation.

5) A maximum amount of liquidated damages can be inserted in the contract.

6) A demand for prompt performance should be made to the contractor. As noted in #4, termination is frequently not feasible except in extreme cases.

7) Delays caused by the Navy relieve payments for some days but not for those days resulting from the contractor's failure to perform (see FPL page 1715).

Captain Mayer, in his excellent study, along with other individuals who have performed work on this subject, is quick to point out that there are indeed, disadvantages, associated with the use of liquidated damages. Some of the major disadvantages are:

A) If actual damages prove to be greater than previously agreed upon liquidated damages, the Government may not recover its actual damages.

B) There is a "cost" associated with the use of liquidated damages because many contractors feel they must protect themselves from the risk of having to reduce final price as the result of late delivery, when fault for such may be difficult to determine.

C) An increased administrative burden because of the need to carefully estimate damage and monitor each contractor's progress.

D) Increased litigation, taxing the limit of the government's legal resources.

The disadvantages, nevertheless, are outweighed by the benefit of having contractual leverage where once there was none. Liquidated damages provide the procurement manager with an effective tool that can be used to protect the government against failure of a contractor to prosecute the work diligently to completion.

As a result of a study performed by the California Law Revision Commission, in 1972, Section 1671 of the California

Civil Code, was, as shown by Captain Mayer, amended in 1978 to provide that:

...a provision in a contract liquidating the damages for the breach of the contract is valid unless the party seeking to invalidate the provision establishes that the provision was unreasonable under the circumstances existing at the time the contract was made.

Captain Mayer has proposed that DAR 1-310 be revised to closely conform to this simple yet flexible and powerful provision. The scope of this thesis does not permit an in-depth study of this proposal, yet the merits associated with such a revision are clear and convincing. Whether or not revision is made to DAR 1-310, however, it stands evident that there is a tool available to the procurement manager, that at least provides for some semblance of flexibility when dealing with risk associated with contract performance. The use of liquidated damages should not be considered an end in itself, because used alone it will be of only partial help in dealing with delinquency and other performance deficiencies.

A management strategy is needed that incorporates the enhanced visibility, monitoring and control discussed in Section A, with the increased incorporation of liquidated damages provisions in stock and in-use item contracts. Negotiating liquidated damages provisions into a contract after award, although helpful in some respects, negates to a great extent, the preventative benefits obtained in pre-award incorporation of the provision. Management must seek to target those requirements, which after careful analysis (i.e.,

Figures 1 and 2) are considered high risk ventures (from the standpoint of probable contractor delinquency) and therefore most suitable for the incorporation of liquidated damages provisions. Liquidated damages should serve, not as penalty provisions used to bludgeon erratic performers, but as a form of negative incentive used to communicate to potential delinquent contractors, the contracting officer's firm intent to abide by the terms and conditions of the contract and have the contractor likewise comply.

In summary, it would do well to present the opinion tendered by the courts in *Sun Printing and Publishing Association V. Moore*, 183 U.S. 642, 699. The opinion should convince the procurement manager of the increasing acceptance of the use of liquidated damages and should stimulate from him a more responsive effort toward their use as a tool to help reduce stock and in-use item contract delinquency. The opinion reads, "The courts at one time seemed to be quite strong in their views and would scarcely admit that there ever was a valid contract providing for liquidated damages. Their tendency was to construe the language as a penalty, so that nothing but the actual damages sustained by the party aggrieved could be recovered. Subsequently the courts became more tolerant of such provisions, and have now become strongly inclined to allow parties to make their own contracts, and to carry out their intentions, even when it would result in the recovery of an amount stated as liquidated damages, upon

proof of the violation of the contract, and without proof of the damages actually sustained."

C. INCENTIVE CONSIDERATIONS

Where discretion exists within the four corners of a Government contract, it is likely to be exercised. "The Department of Defense attempts to secure performance by writing contracts that limit a contractor's discretion in the acquisition process. Thus, if the contractor had limited discretion with regard to cost and final performance but more discretion concerning the delivery date, the DOD contracting officer might add a deliver date incentive to encourage early delivery."

The profit goal is considered by DOD, to be the prime motivating force behind contractor performance. DAR states:

Profit generally is the basic motive of business enterprise....The objective should be to insure that outstandingly effective and economic performance is met with high profits, mediocre performance with mediocre profits and poor performance by low profits to losses.¹

This means that DOD expects the profit objective to motivate a particular contractor to complete his contract in a manner that is beneficial to the government. Although this regulatory guidance stresses the profit motive, few serious researchers have unequivocally supported the use of incentives to achieve expected goals. There appears to be a great diversity of opinion as to what actually motivates contractor performance

¹Defense Acquisition Regulation; p. 3-22.

and therefore should be used as the most effective intra-contractual incentive:¹

A) Peck and Sherer in, The Weapons Acquisition Process: An Economic Analysis, state, "It is generally assumed that a major objective of contractors is to maximize profits, presumably by maximizing the price stated in a contract, and that these profit-maximization efforts conflict with the government's goal of minimizing weapons cost.

B) Robert N. Anthony in, The Trouble with Profit Maximizations, differs with the above slightly by noting that managers tend to strive for satisfactory rather than maximum profit. This is because profit maximization is extremely difficult to achieve in practice and is sometimes immoral as well.

C) Machlup, in, Theories of the Firm: Marginalist, Behavioral, Managerial, concluded that, "Maximization of money profits is certainly the simplest objective function, but it works only in the case of firms exposed to vigorous competition."

D) Gordon Donaldson, in, Financial Goals: Management vs. Stockholders, believed that managers as a whole aspired toward continuity and growth, not to profit maximization. He considered the continuity of the firm and the manager's own job to be most important to the individual decision maker.

¹Opinion excerpts taken from: Theory of Incentive Contracting; Demong and Strayer, pages 42-51, Defense Management Journal, First Quarter 1981.

E) Baumol, in, Business Behavior, Value and Growth, suggested that the firm's primary objective is the maximization of sales, or the rate of growth of sales.

F) Robin Marris, in, The Economic Theory of "Managerial" Capitalism, theorizes that firms will attempt to maximize the growth rate of the demand for the firm's products and of the firm's productive capacity.

Demong and Strayer themselves point to several factors that can be significant contractor motivators. These include:

- A) growth
- B) new product lines
- C) prestige
- D) improved public image
- E) social approval
- F) national goals
- G) potential for follow-on business
- H) commercial application
- I) excess manufacturing
- J) engineering capacity
- K) labor capacity
- L) excelling for the sake of excellence
- M) increased profits on other contracts through shared overhead.

The research clearly shows that there are many schools of thought related to the question of what motivates contractor performance. More and more, researchers are convinced that

there are a great number of motivational factors that challenge the long standing DOD belief in the theory of the effectiveness of incentives based on profit maximization. What this boils down to, is the necessity for intensive analysis of each and every contractual action, to determine the best possible incentive vehicle. Management must be intimately familiar with the contractor, his organization and the internal desires of corporate individuals such as the major project managers, to be able to select the optimum incentive structure. How does this relate to solving the delinquency problem in the procurement of stock and in-use items?

First, contract cost structures and historical cost growth scenarios associated with the high visibility of major systems acquisitions, are principally absent from the world of stock procurement. The fundamental need for motivational instruments aimed at providing incremental or percentage return to major system contractors, based on complex criteria such as cost or quality control, is evident based on the need to satisfy a demanding public. The cost of incentives even becomes a major consideration in the total "program" cost picture for budgetary purposes. There is no such consideration in stock procurements.

Second, the intensive resources required to support the determination of what particular incentives are required, on a case-by-case basis, are not available, to the stock and in-use item procurement managers.

Third, and most important, is the philosophical basis for using incentive provisions. In complex, high risk system acquisitions, the use of incentives seems appropriate, as summed up in the DOD Incentive Contracting Guide: "Incentive contracts utilize the drive for financial gain under risk conditions by rewarding the contractor through increased profit for attaining cost (and sometimes performance and schedule) levels more beneficial for the government than expected (target) and by penalizing him through reduced profit for less than (target) expected levels." In stock and in-use item procurement, however, absent the high risk and complexity of enormous systems programs, there should be a strong resistance to paying a bonus to a contractor for delivering material on time as he promised to do, as part and parcel of obtaining the award. This thesis proposes that, in the absence of "extremis", where critically needed spares are experiencing dangerously low stock levels, or in other grave "need" situations, the use of monetary incentives to encourage prompt delivery and discourage contractor delinquency, should be strictly avoided. The risk involved does not lend itself to the employment of incentives. There is no extreme cost or uncertainty burden levied upon stock suppliers, nor is there the enormous engineering and technical uncertainty dimension experienced by major systems contractors. In major systems programs, incentives usually are associated with variable elements such as cost control and value engineering or quality

assurance, and not with concrete elements such as delivery. The law has not established a vehicle that demands a bonus for the reasonable completion of all contract requirements yet it recognizes performance to be a duty and does in fact give remedy to the injured party when the promise to perform is breached. A contractor must not be rewarded for doing no more than keeping a promise which, by law, was his duty.

D. POST AWARD MANAGEMENT AND ADMINISTRATION

Satisfactory performance on a government contract is the result of adequate planning, monitoring and control, on the part of the contractor and the government. This process begins in the pre-award phase and no doubt follows the path (proper or not) set for it there, throughout the entire life cycle of the contract. Successful implementation of an efficient, cohesive, planning, monitoring and control system at the outset, greatly facilitates the job of post-award production and progress surveillance. Section A of this chapter endeavored to present an approach designed to provide for effective contract life cycle planning, monitoring and control, beginning at the earliest stages of the pre-award process, and carrying over into the post-award administrative realm. The intent of such an approach is to facilitate contract administrator efforts to:

- A) Analyze contract terms and specification requirements, to ensure adequacy and the contractor's ability to meet them.

B) Review and evaluate the contractor's production plan, in terms of in-house capabilities and potential performance risks.

C) Monitor the progress being made against the contractor's predetermined production plan and its relation to meeting contractual schedules (passive/active indicators).

D) Recommend or take corrective measures, if appropriate, to improve the current manufacturing situation if potential or actual delays are seen to exist or where progress is not being made commensurate with contract or program requirements.

An internal control system alone, however, is not sufficient enough to ensure that the administrator receives the most accurate, up to date information on contractor production progress. What is needed, is an on-going, communicative, cooperative relationship between the in-house SPCC contract administrator and the on-site DCAS industrial specialist. It is noted that on many occasions, such a relationship does not currently exist. Interviewees were split on their perception of DCAS personnel as partners in the contract administration process. Half felt information provided by their DCAS counterpart was often too late and far too "skimpy" to be of any reasonable use to them. They equated this with a lack of dedication and competence on the part of the DCAS administrator. The other half, remarkably, stated that DCAS usually provided "too much" information. The common response seemed to be "Don't they realize we're far too busy to weed through all of this data?" While the author feels there is

merit to both points of view, based on a review of DCAS generated correspondence, it likewise appears obvious that the reality of the situation lies somewhere in the middle. It appears that most of the DCAS data is in fact timely (although some pointed exceptions will be shown below) and accurate. Unfortunately, the poorer reports tend to drag the good ones down with them, at least in the eyes of many SPCC contract administrators.

DCAS, likewise, is not absent its criticism of SPCC's contract administrators. The preponderance of contracts whose performance deficiency is traceable to a lack of a pre-award survey, has not escaped their attention. Much of the correspondence regarding delinquent contractors, reviewed by the author, illustrated DCAS' concern over a reticence on the part of SPCC to perform pre-award surveys (see Chapter IV, Section A, for a detailed discussion). Of course, pre-award surveys are the buyers responsibility, not the administrator's. Nonetheless, like the bad DCAS data that spoils the good, many DCAS personnel perceive SPCC as a "whole" when assessing competence and commitment. The Feltes report, discussed in Chapter III, illustrates another common DCAS perception. It is held that SPCC routinely accepts contractor requests for waiver or modification of test or specification data, for the contractors own convenience in manufacture. It is felt that SPCC is lax in pointing out the inadequacies of such contractor requests, when they exist. Additionally, it is believed

that SPCC takes an inordinately long time to respond to contractor requests, thereby allowing the contractor to allege government delay and receive a no cost delivery extension. These problems do exist, but as exceptions rather than the rule. One tends to focus on the exceptions, however, and that is why there is a prevailing misunderstanding between SPCC and DCAS.

The root of the problem lies in perception, not fact. The vehicle for divergence of viewpoints is lack of understanding and communication. Delinquency flourishes where there is a breakdown of effective management surveillance and control. This breakdown occurs because there is frequently a lack of communication and coordination between DCAS and SPCC. This problem must be corrected before a successful problem-solving strategy can be developed.

There must be a continuing relationship between SPCC and DCAS in the pre-award and administration phases. It is DCAS' job to keep the PCO (in this case the Contract Management Division administrator) advised of contract status and potential major problem areas. Similarly, the PCO must keep DCAS advised of all production related matters which emanate from the cognizant material manager. The DCAS industrial specialist is the contract administrator's most important tool in the monitoring and control process. The industrial specialist has the physical proximity to the contractor that the SPCC administrator lacks. The industrial specialist serves the

administrator by analyzing the contractor's production facility capabilities and production management techniques and by making applicable recommendations for improvements or corrections of deficiencies. "Industrial specialists evaluate contractor's performance on contracts as to compliance with terms and requirements relative to delivery and all related production functions" [Ref. 24]. It is the industrial specialist's responsibility to coordinate with SPCC contract administrators while executing his assigned contract production administration function. By working together, the industrial specialist and the contract administrator will be able to identify early warning signs that may point to potential delinquency, and thus work to prevent the problem before it occurs. It is no doubt a fact, that successful completion of a contract is better attained by preventative action rather than "after the fact" expediting, which is currently the case. By working together to dispel common perceptions and open up a more cooperative, informative relationship, the contract administrator and his on-site industrial specialist will be able to substantially affect the outcome of all contracts to which they are a part.

Without the advantages of an automated control and monitoring system, the contract administrator must rely heavily on progress data supplied by his DCAS representative. This data may be obtained from many sources. It may be obtained from production progress conferences held by the contract

administration office, from industrial specialists at the work site or from periodic progress reports by the contractor to the ACO or PCO. There is a dual responsibility associated with the submission and review of the various progress reports. First, the DCAS representative must endeavor to objectively and realistically provide progress data "before" actual schedule milestone slippage. Such has not always been the case, based on a review of the Production Progress Reports, DD FORMS 1654, forwarded to SPCC. This valuable source of information is often forwarded too late to have any preventative value. Additionally the "carte blanche" approach to recommendations which come in the form of "leave delinquent," is of little value to the administrator. This progress report is especially useful as an aid to allow the contract administrator to increase the level of visibility and hence the level of management attention necessary, based on the report's conclusions. If the report is not timely, that is, not preventative or anticipatory in nature, the process then becomes one of exception management and expediting. The contract administrator, on the other hand, must learn to pay more attention to the progress or status reports provided by DCAS as control tools and put less emphasis on waiting for the phone to ring. The status reports should be integrated into the overall life cycle management plan the administrator should have for all of his contracts (see Chapter IV, Section A). Given the large workload faced by each administrator, it would be a mistake

to conclude that the worker will have instant recall of each pre-determined, review milestone under each contract he holds. However, if a milestone suspense system for active/passive indicators, such as that referred to in Section A, is being kept, the administrator will have the dedicated memory capability necessary to keep tabs on contractor performance.

The administrator, working with the buyer and a cognizant DCAS representative, should, during the pre-award phase, identify key performance milestones in contracts where life cycle performance is felt to be at some risk. Both contractor and Government milestones should be included. With designated milestones in hand, the contract administrator must establish a milestone suspense file that will be used to track the contract through to completion. As noted earlier, passive and active performance indicators will form the major input for suspense file upgrading. It is proposed here, that if DCAS properly and accurately provides timely status or progress information, and if SPCC places more emphasis on these reports, there will be a system in place that will effectively deal with contractor delinquency before it gets out of hand.

Passive indicators such as the absence of a first article DD FORM 250, would key the administrator to begin reviewing the impacted contract suspense file to determine what the problem is. More important, however, are the active indicators of adverse or potentially adverse performance. Some active performance indicators, as noted by Mssrs. Knittle and Carr are:

A) Lack of Physical Progress

- adverse contractor progress reports (DD FORM 375)
- adverse DCAS progress reports (DD FORM 1654)
- requests for delivery extensions

B) Technical Difficulties

- requests for waiver/deviations
- adverse DCAS technical reports

C) Financial Problems

- requests for upward price adjustments
- requests for revised payment provisions
- ACO reports of adverse developments
- bank assignments

Review of incoming adverse performance indicators should cause the administrator to update his milestone suspense file and make an assessment of the problem's potential impact on downstream performance. If, after an analysis of all available information, the administrator feels performance is in jeopardy, he should increase the level of management visibility currently applied to the contract and seek to apply corrective measures before reaching "extremis". The process entails a higher level of SPCC/DCAS coordination and understanding than is now the case. Also, administrators should take a more active role in constructively establishing improved monitoring and control habits such as those discussed above.

It is recognized that the current staff available to deal with the delinquency problem is not likely to increase

dramatically in the near future. Likewise, it is not anticipated that the existing workload will diminish within the same time period. Management, then, is faced with the age-old problem of having to do a job that is larger than the resources on hand to accomplish it. The foregoing discussion presents alternatives that are considered feasible, yet, perhaps very difficult to implement under the current condition. It is hoped that some benefit may be derived, however, by an examination of such alternatives and the possibilities they present, to the establishment of an effective delinquency problem-solving strategy.

V. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS AND RECOMMENDATIONS

1. Conclusion--Delinquency on the part of Navy contractors plays a key role in exacerbating the shortage of repair parts needed to support the fleet. Nearly one-quarter of all stock and in-use item contracts can be classified as delinquent. SPCC, in its role as a weapons system life cycle manager, faces a complex, deceiving, yet very real delinquency problem. SPCC's ability to ensure that 85% of all requests for stock items can be immediately satisfied from on-hand resources, appears to be severely tasked because of this problem. Unlike systems acquisition or commodity procurement, delinquency in the procurement of stock and in-use items impacts real-time fleet operational readiness. Like scarce mineral resources are to national defense, delinquency may be the "Achilles Heel" of the Navy's operational integrity.

Recommendation--Defense Secretary Weinberger and former Deputy Secretary Carlucci, established an objective to balance the real increases in defense expenditures between force modernization and improved logistics support. It was recognized that logistics considerations had taken a back seat to system "end-item" considerations, for too long. Two goals of significance, if achieved, would greatly enhance the Navy's ability to deal with delinquency because visibility would be

established and more money would be applied, in the budget, to purely logistics considerations. The goals are:

1) To set weapons system readiness objectives. This would put the readiness objective on par with the more traditional management priorities of cost, schedule and performance.

2) To provide meaningful post-production support. The ideal would be to require the military services to budget for and establish effective post-production support plans for those weapons systems going out of production.

What is needed is increased visibility of the delinquency problem facing major logistics managers. Now is the time for logisticians to call for additional resources that would allow them to achieve substantial gains in the capability to maintain ready forces by employing effective delinquency problem-solving strategies.

2. Conclusion--The delinquency problem at SPCC is a function of the dynamism of the particular type of procurement involved and the fact that SPCC operates as a public entity. The interplay of unique, stock and in-use item procurement environment characteristics, creates a dichotomy of conflicting goals, objectives, needs and desires experienced between the customer, SPCC, and its suppliers. This dichotomy manifests itself in an overall lack of contractor commitment to meet contractual requirements. Likewise, the operation of SPCC, as a public entity, fosters an inability to respond with any substantial degree of flexibility, to changing conditions.

The absence of traditional business relationships, the high level of public accountability and the dependence of the process on the changing needs of the sovereign, are all elements of this concept.

Recommendation--There are elements of the delinquency problem that are firmly ingrained in the fabric of the process. SPCC does not have the resources required to attempt to restructure the process to reduce its dependence on dynamic variances nor does it have the authority to change the basic way it does business with its suppliers. SPCC must recognize and isolate overt elements of the procurement process that provides a vehicle for delinquency problem formulation, while accepting those factors in the process that are essentially intangible and not subject to management intervention. SPCC should seek, through a process of illustration and education, to convince responsible elements in the chain of command, that the stock and in-use item procurement environment is unique and warrants special attention. SPCC should strive to obtain authority to exercise a greater degree of flexibility in dealing with its suppliers, especially in the source selection process.

3. Conclusion--SPCC faces an enormous and diverse workload that impedes management's ability to effectively isolate and deal with the delinquency problem. The inertia of such a workload forces workers to "react" to problems as they come up rather than rely on a well-structured, prioritized approach

to their work. This continuous "fire-fighting" hampers management in its attempt to organize the workforce to direct their attention to specific problems such as delinquency.

Recommendations--Three alternatives are proposed:

A) The obvious, and perhaps most difficult, is to request higher personnel ceiling points and a greater number of in-house available billets for buyers and administrators. This would effectively reduce the per person case load by dividing the number of cases among a greater population of workers, thereby enhancing management's ability to promote change in case management.

B) Cross-train contract administrators to take over buyer responsibilities (the problem with this is the personnel job classification structure). Buyers would be responsible for their contract requirements from cradle to grave. There would be a greater degree of accountability and commitment on the part of buyers, trade (business) relationships could be established and promoted and a greater amount of leverage would be placed in the buyers hands.

C) Require buyers and administrators to develop a contract performance and milestone management system (see Chapter IV, Sections A and D) that will add the necessary amount of structure and organization to their workload, to ensure adequate visibility is maintained over all cognizant contracts, especially those considered to be potential delinquents.

4. Conclusion--Statistics point to the fact that the characteristics of the delinquency problem are anything but

clear cut. Management, thus, has a difficult task in deciding where and when to apply its scarce resources to engage in delinquency problem-solving activity. Delinquent contracts vary in value from \$5.00 to over \$1 million. Some contractors have numerous SPCC cognizant contracts with perhaps a single delinquency while others have each and every one of their contracts in a delinquent status.

Recommendation--Management must become well acquainted with the more "overt" characteristics of the delinquency problem, characteristics that will provide it with an idea of which avenue to choose to obtain the most cost-effective solution to the problem. The prevailing philosophy should be to minimize administrative burden while maintaining an acceptable level of visibility over these characteristics. Limited personnel resources must be prioritized in the application of post-award surveillance of potentially delinquent contracts characterized by the appearance of "overt" deficient performance indicators.

5. Conclusion--Pre-award surveys are not being used as a tool to aid the contracting officer in a determination of the acceptability of prospective contractors. DCAS generated correspondence relating to deficient performers, implores the contracting officer to utilize this vehicle to gain insight into overall performance characteristics of the contractor which may impact downstream contract solvency.

Recommendation--Early visibility is the key denominator in the contracting officer's pre-award decision-making

strategy. The DAR leaves room for contracting officer judgment in weighing the cost-effectiveness of having a pre-award survey performed against the risk of possible future contract performance difficulties, especially in the case of a small business where the use of a pre-award survey may be justified all the way down to \$10,000. The pre-award survey is a tool available to the contracting officer which allows him to gather as much information as possible on a contractor's ability to meet contract requirements. It is essential that this tool be used whenever feasible so that a data base of predictive performance indicators may be established, so as to allow for contract life cycle performance monitoring.

6. Conclusion--The source selection process, as it exists, leaves the procurement manager little discretion (except in the case of a determination of non-responsibility) over which contractor will eventually receive the award. This inflexibility fuels delinquency by replacing the exercise of sound business judgment with external (social, economic, political) considerations.

Recommendation--The contracting officer, absent the leverage and flexibility necessary to deal with suspect performers, in the source selection process, must develop a workable performance monitoring system (see Chapter IV, Section A). The primary goal will be to obtain predictive indicators of probable performance. The performance indicators will be used to key the contracting officer to the level of visibility

necessary to ensure the contract gets the requisite amount of management attention. A suspense file will be maintained, by cognizant contract administrators, that details specific performance milestones in the contract life cycle. The performance indicators will dictate the level of attention necessary, on the part of the administrator, that must be applied to the milestone chart in addition to the degree to which passive/active post-award performance indicators must be monitored.

7. Conclusion--Delinquency status tools such as the CDL and CEL are not sufficient enough to provide the procurement manager with accurate, comprehensive, up-to-date information. The CDL is infrequently updated and highly susceptible to error. The CEL, although a superior tool in its own right, is too narrow in scope to allow for the type of information on delinquent status needed by the procurement manager.

Recommendation--The procurement manager should have a procurement dedicated, automated, management reporting system, which includes up-to-date data on contractor delinquency. A computer should provide reports on such things as performance of individual firms in the form of an index which is up-dated and provided each month. Other valuable information would include: contractor volume of business, rejected shipments, late deliveries (segregated by fault) and more. An automated contract administrator milestone suspense file system (see Chapter IV, Section D) would be optimal. Such a

system would continuously update the milestone chart and provide real-time data to the administrator to allow for a determination of the amount of visibility and management attention required.

8. Conclusion--SPCC needs a contractual vehicle that mitigates the need for extensive, all-encompassing remedies such as Default, yet is effective enough to dissuade prospective contractors from de-emphasizing their government contractual commitments.

Recommendation--Liquidated damages provisions, placed in contracts prior to award, provide the procurement manager with an effective tool that can be used to protect the government against failure of a contractor to prosecute the work diligently to completion. The law does not look with disfavor upon liquidated damages provisions. When they are fair and reasonable attempts to fix just compensation for anticipated loss, caused by breach of contract, they are enforced.

9. Conclusion--There is a lack of communication and understanding between SPCC contract administrators and their DCAS counterparts. This rift degrades the cooperative performance between the two offices, that is necessary, if the delinquency problem is to be effectively approached.

Recommendation--There must be a continuing, cooperative relationship between SPCC and DCAS in the pre-award and post-award administration phases. DCAS must keep the PCO advised of contract status and potential major problem areas. Likewise, the PCO must keep DCAS advised of all production-related

matters which emanate from the cognizant material manager. By communicating and working together, the SPCC contract administrator and his DCAS counterpart will be able to identify early warning signs that may point to potential delinquency and thus work to prevent the problem before it occurs.

10. Conclusion--The delinquency problem faced by SPCC is as intangible as it is tangible. There is no single solution to the problem, in fact, there is likely to be no solution to it at all. The thoughts, considerations, ideas and recommendations proposed in this research effort are based on a reasonable yet limited review of the facts. It would be presumptuous and mistaken to fault, without qualification, efforts directed (or not directed) at a problem, without fully understanding the problem itself. This research effort admits to a knowledge of only the tip of the iceberg.

Recommendation--Those who know the problem best are those who work with it every day. SPCC should rely on its own judgment and insight when approaching the delinquency problem. It should turn to these pages to discover alternatives or "a second opinion". There is room for a great number of management initiatives on just the tip of the iceberg. This alone, warrants consideration of the recommendations of this thesis. The deeper, more fundamental aspects of the problem, its implications and applicable problem-solving strategy, must be left to those best equipped to deal with it.

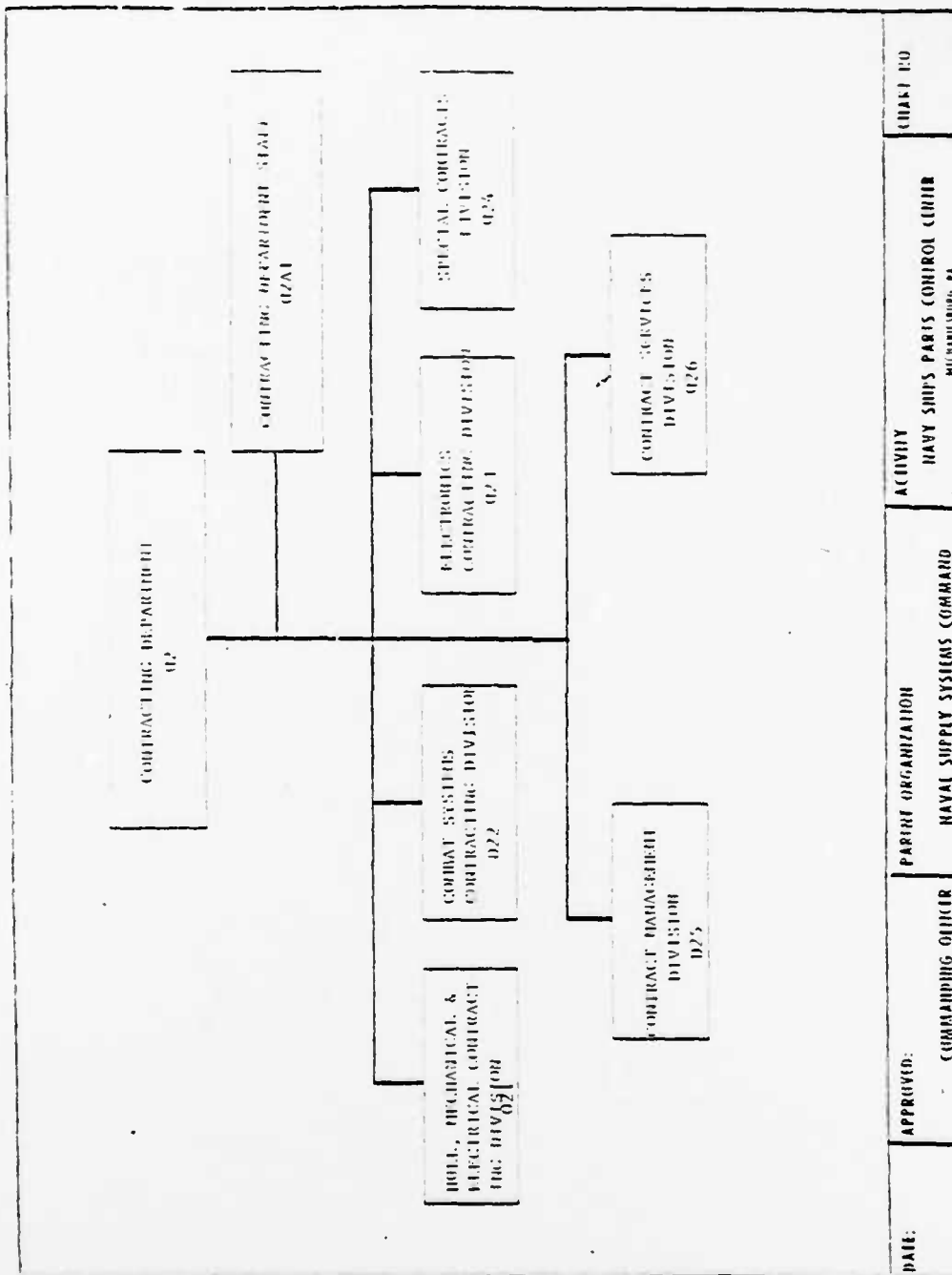


EXHIBIT A-1: CONTRACTING DEPARTMENT ORGANIZATION CHART (NEW)

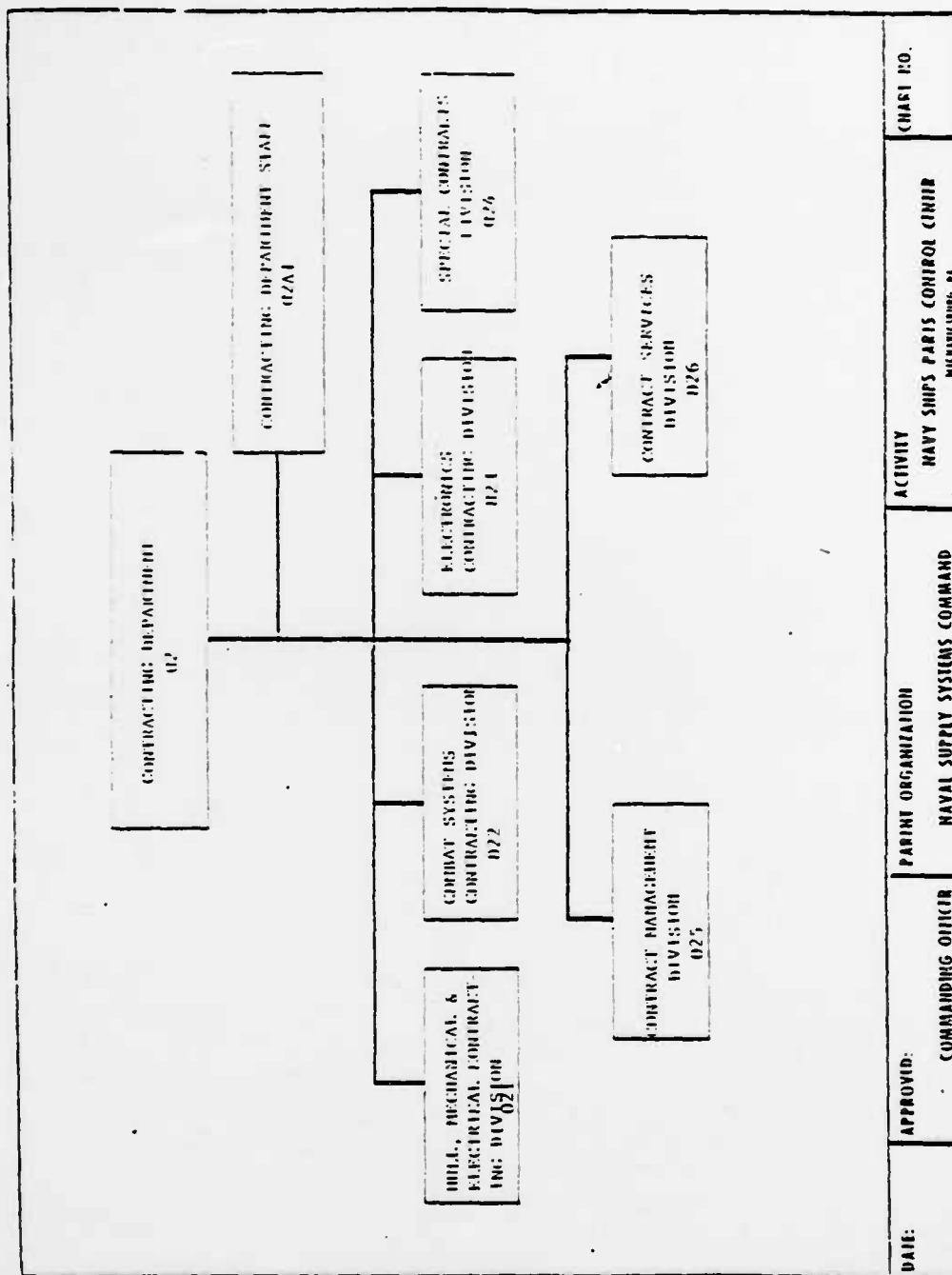


EXHIBIT A-1: CONTRACTING DEPARTMENT ORGANIZATION CHART (NEW)

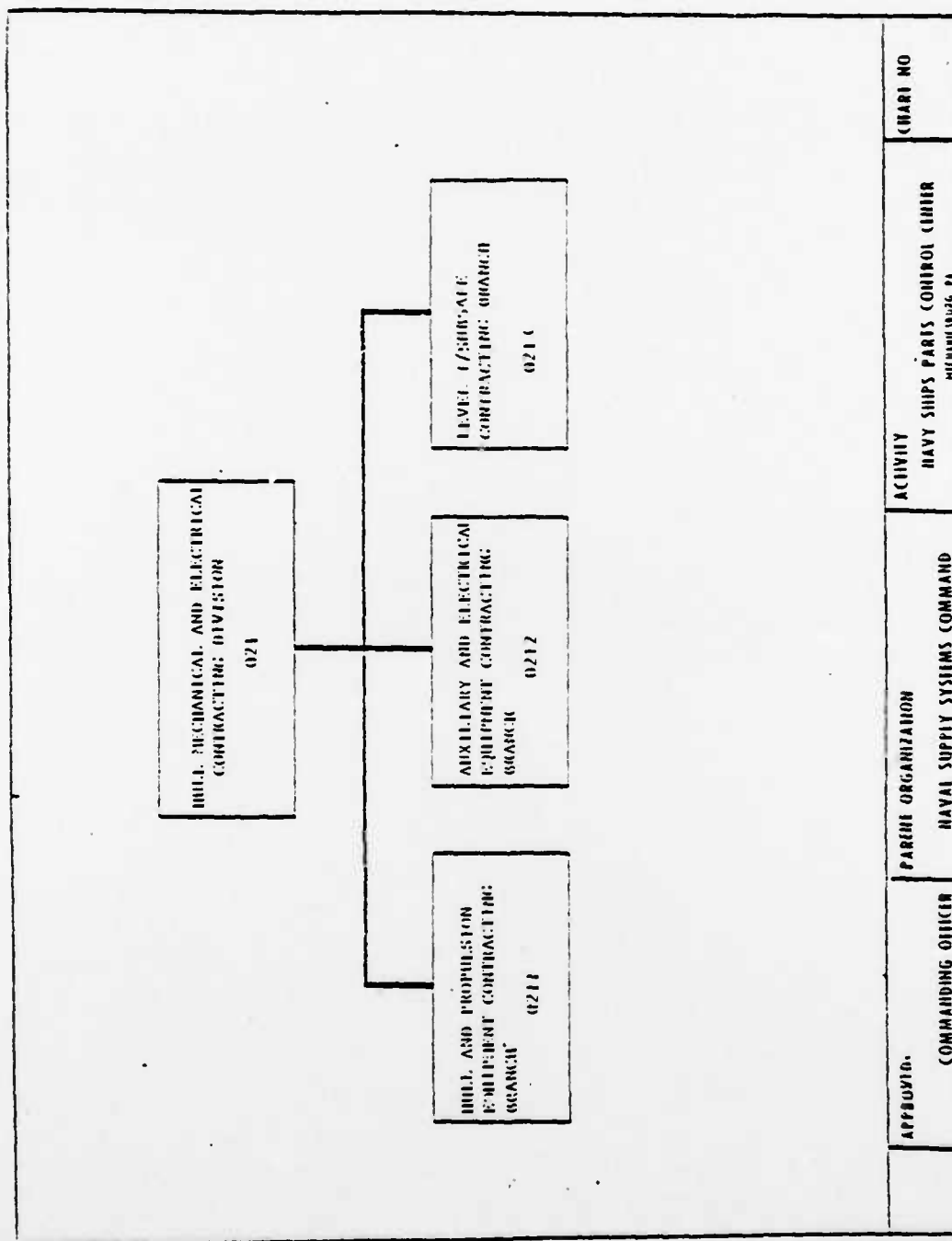


EXHIBIT B: DIVISION ORGANIZATION CHART

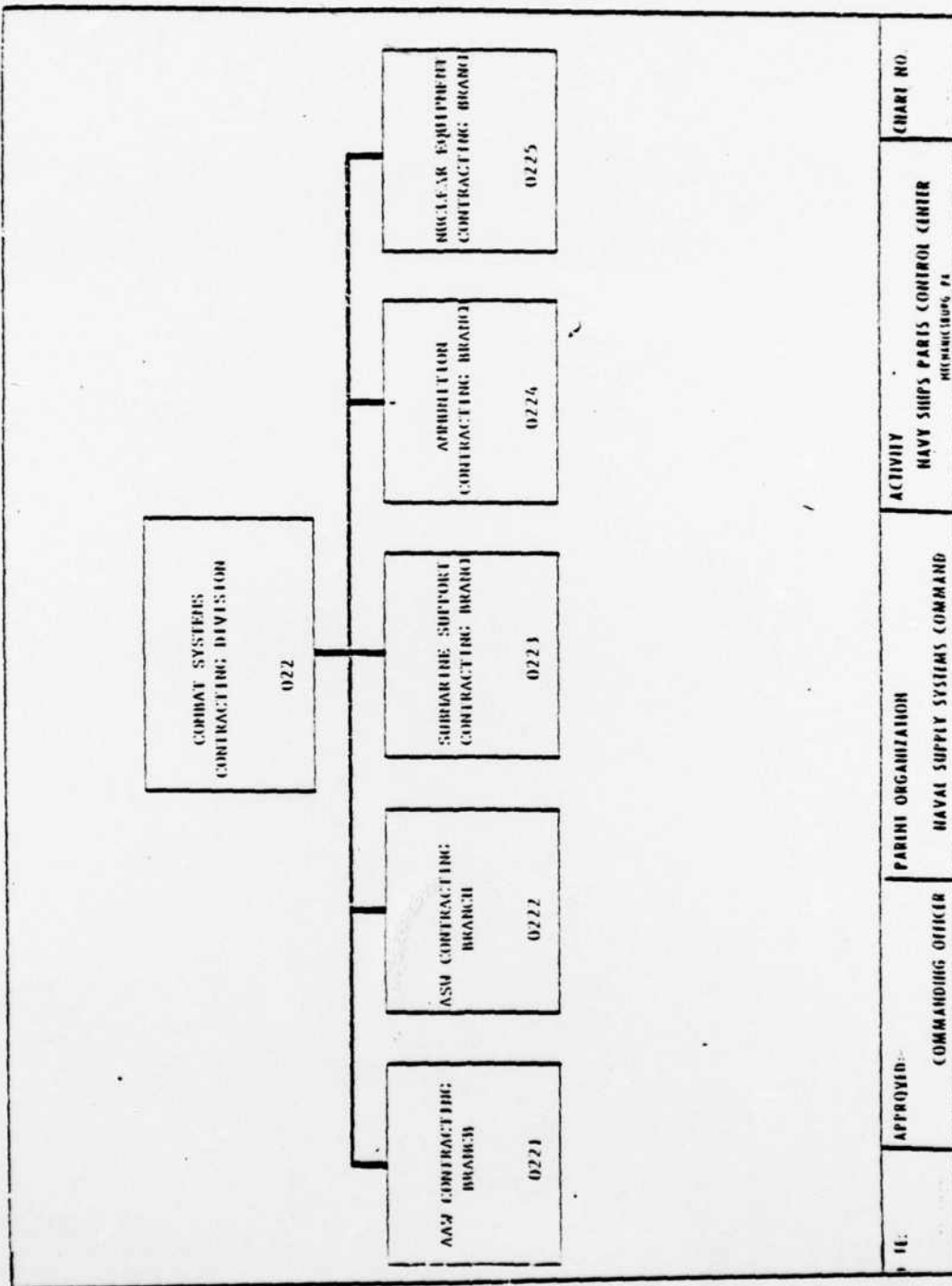


EXHIBIT C: DIVISION ORGANIZATION CHART

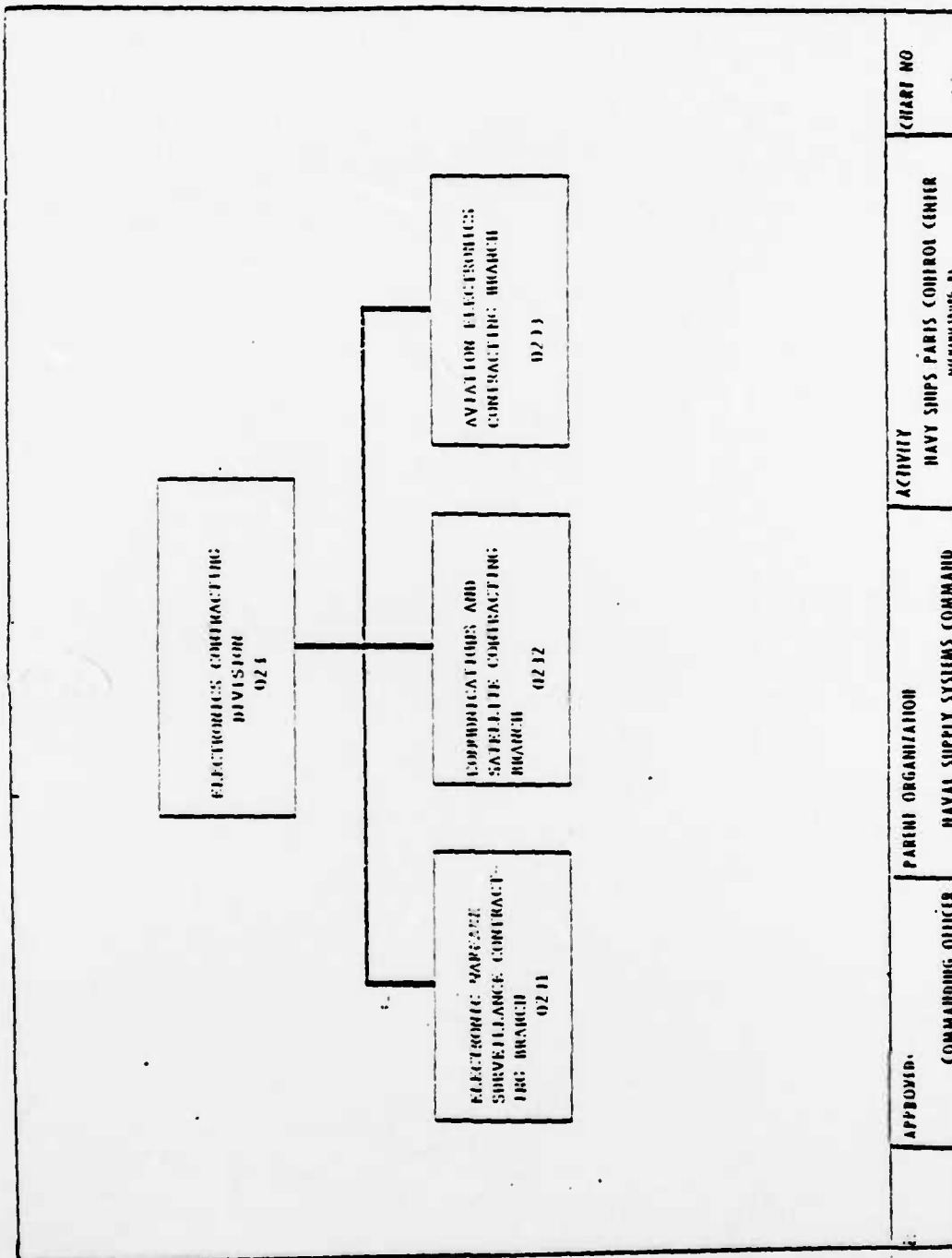


EXHIBIT D: DIVISION ORGANIZATION CHART

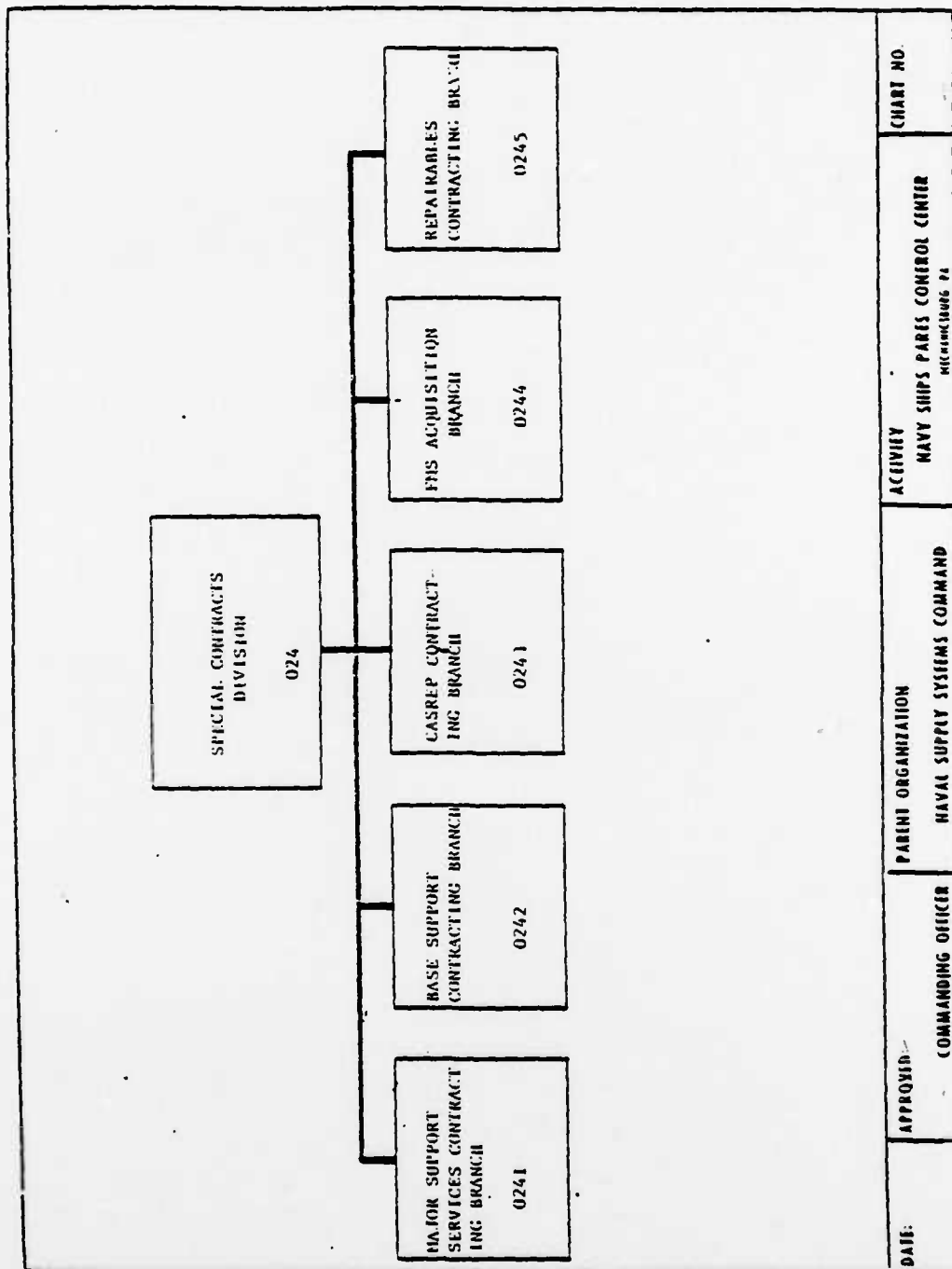


EXHIBIT E: DIVISION ORGANIZATION CHART

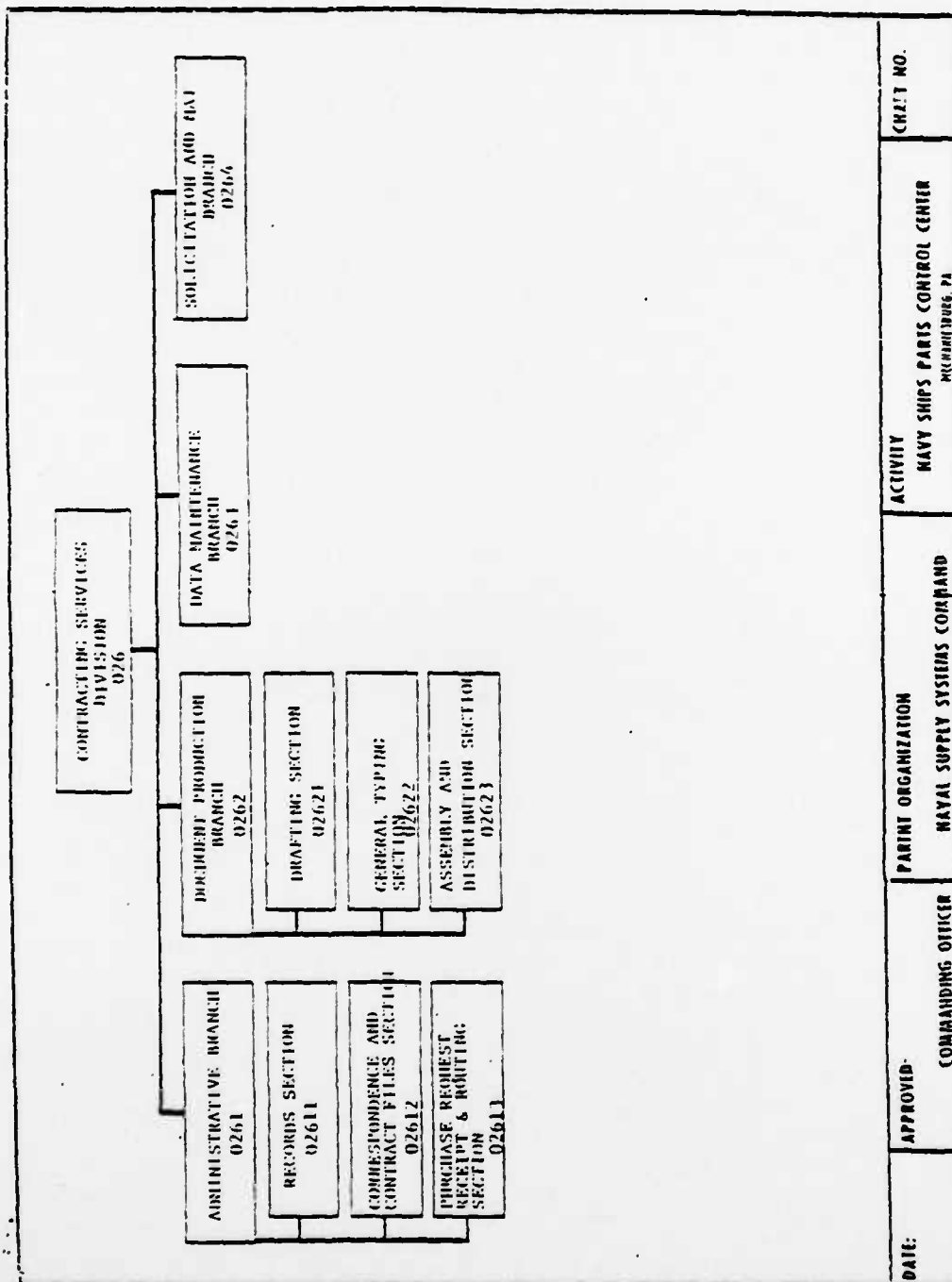


EXHIBIT F: DIVISION ORGANIZATION CHART

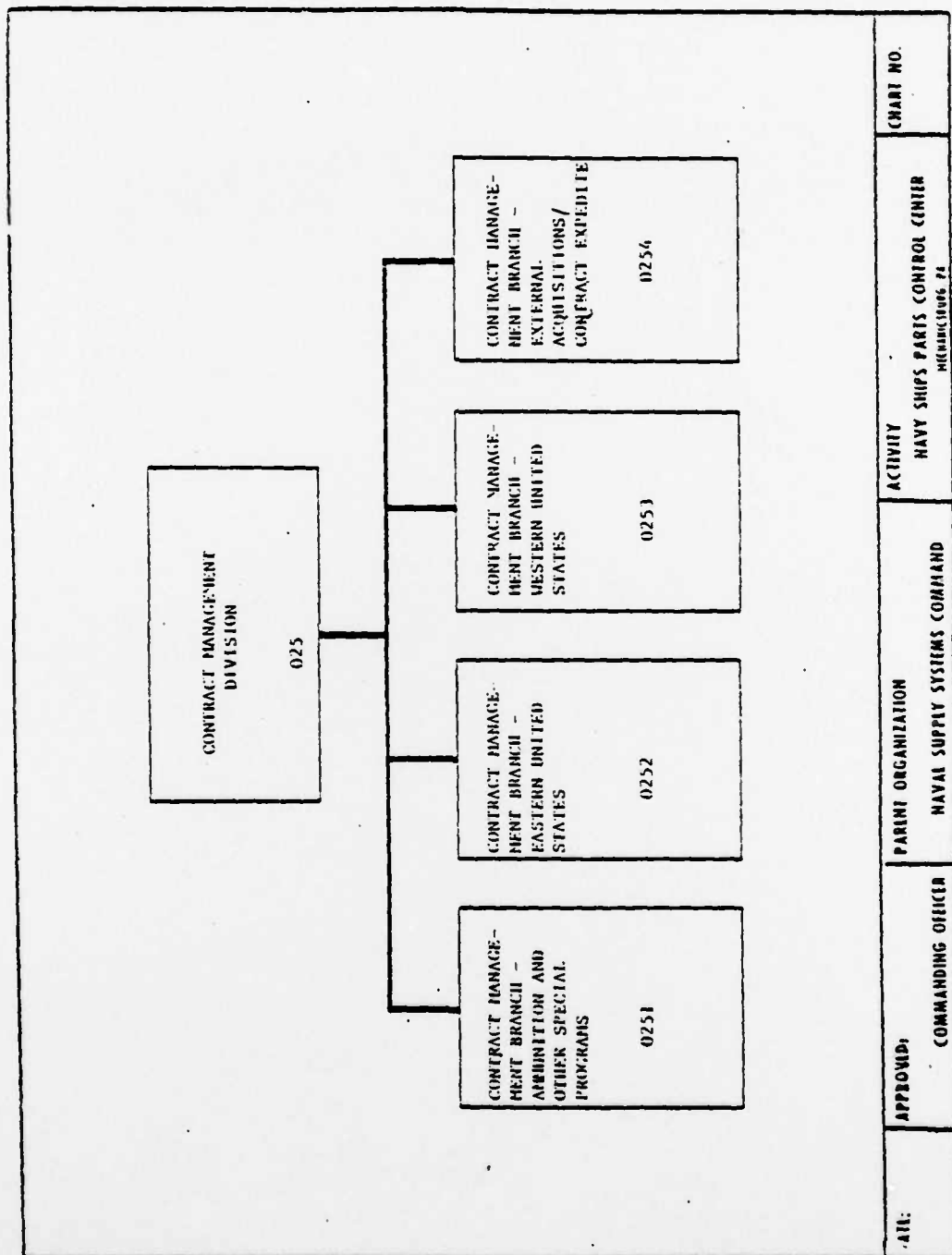


EXHIBIT G: CONTRACT MANAGEMENT DIVISION
ORGANIZATION CHART

FSCM	MANUFACTURER AND ADDRESS	CAO
XXXXX	CURB CO	53900A
	415 Sobrel Ave	
	Girdon PA 21507	

DEL DATE	PIIN/CALL	CLIN	NIIN	TOT QTY	EXT \$ VALUE	BALANCE DUE
78302	N0010478VR352	0005	010658762	17	97.41	17
78332	N0010478VR352	0003	010629251	4	686.40	4
78332	N0010478VR352	0002	010629250	6	347.58	6
78332	N0010478VR352	0001	010684417	3	568.80	3
79017	N0010478VY760	0001	010292247	24	143.76	24
79022	N0010478VBD23	0001AA	003948703	412	3683.28	412
78022	N0010478VBD23	0001AB	003948703	180	1609.20	180
79046	N0010478VEC14	0001	006539871	17	678.13	17
79069	N0010478VDS59	0001	003701050	5	342.60	5
79078	N0010478VDZ43	0001	005496367	1000	440.00	1000

FSCM TOTAL CONTRACTS/\$VALUE	CONTRACTS DELINQUENT/\$VALUE	PERCENT DELINQUENT
59 \$524,884.94	10 \$8,637.16	16.95

EXHIBIT H: SAMPLE PAGE, CONTRACTOR DELINQUENCY LIST

LIST OF REFERENCES

1. Dunbar, Glen B., Identification of Causes and Analysis of Techniques for Reducing Delinquent Deliveries in Department of Defense Production Contracts, M.S. Thesis, Naval Postgraduate School, Monterey, CA, 1980.
2. Cibinic, John and Nash, Ralph C., Administration of Government Contracts, George Washington University, Washington, D.C., 1981, pg. 226.
3. Webster's New Collegiate Dictionary, Merriam-Webster, G. and C. Merriam Company, Springfield, Mass., 1977, pg. 300.
4. Cibinic, John and Nash, Ralph C., Administration of Government Contracts, George Washington University, Washington, D.C., 1981, pg. 225.
5. "Command Business Presentation Guide," Naval Ships Parts Control Center, Mechanicsburg, Pa., 1981, pg. 14.
6. "Command Business Presentation Guide," Naval Ships Parts Control Center, Mechanicsburg, Pa., 1981, pg. 126.
7. "Command Business Presentation Guide," Naval Ships Parts Control Center, Mechanicsburg, Pa., pg. 50.
8. Lee, Lamar and Dobler, Donald W., Purchasing and Materials Management, McGraw-Hill, 1977, pgs. 11-12.
9. Lee, Lamar and Dobler, Donald W., Purchasing and Materials Management, McGraw-Hill, 1977, pg. 433.
10. Lee, Lamar and Dobler, Donald W., Purchasing and Materials Management, McGraw-Hill, 1977, pg. 434.
11. "Contracting Department Organizational Responsibilities Guide," Naval Ships Parts Control Center, Mechanicsburg, Pa., 1981, pg. 6.
12. "Contracting Department Organizational Responsibilities Guide," Naval Ships Parts Control Center, Mechanicsburg, Pa., 1981, pg. 7.
13. Dunbar, Glen B., Identification of Causes and Analysis of Techniques for Reducing Delinquent Deliveries in Department of Defense Production Contracts, M.S. Thesis, Naval Postgraduate School, Monterey, CA, 1980.

14. Contract Administration, Volume I, U.S. Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, 1980, pg. 162.
15. Feltes, D.J., Lcdr, SC, USN, "Report of Summer Assignment," DCASMA Chicago, Ill., 1981.
16. DCASMA Van Nuys Letter, DCRL-GUCB/B6 of 21 September 1982.
17. "Contracting Department Organizational Responsibilities Guide," Naval Ships Parts Control Center, Mechanicsburg, Pa., 1981.
18. Reinhard, M.J., "Improving the Source Selection Process," Concepts, Summer 1982, Volume 5, Number 3, pg. 42.
19. Mayer, J.H. Capt, SC, USNR-R, "Report on the Feasibility of Using Liquidated Damages Clauses and Monetary Incentives in Stock Procurement Contracts," 1981.
20. Nassr, M.A. Col., USA, "Past Performance: An Essential Element in Source Selection," Defense Systems Management Review, Autumn 1978, Volume I, Numbers 7-8, pg. 8.
21. Reinhard, M.J., "Improving the Source Selection Process," Concepts, Summer 1982, Volume 5, Number 3, pg. 36.
22. Government Contract Law, U.S. Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, 1978, pg. 173.
23. Government Contract Law, U.S. Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, 1978, pg. 176.
24. Contract Administration, U.S. Air Force Institute of Technology, Wright-Patterson Air Force Base, Ohio, 1980, pg. 162.

BIBLIOGRAPHY

- Cibinic, John and Nash, Ralph C., Administration of Government Contracts, George Washington University, Washington, D.C., 1981.
- Colley, John L. Jr., Landel, Robert D. and Fair, Robert R., Production, Operations, Planning and Control, San Francisco, Holden-Day, Inc., 1977.
- Demong, Richard S. and Strayer, Daniel E., "The Underlying Theory of Incentive Contracting," Defense Management Journal, Volume 17, Number 1, 1981.
- Fox, Ronald J., Arming America: How the U.S. Buys Weapons, Harvard University, Graduate School of Business Administration, Boston, 1974.
- Gansler, Jacques S., The Defense Industry, MIT Press, Cambridge, Mass., 1982.
- Keen, Peter, G.W., and Morton, Michael, S., Decision Support Systems: An Organizational Perspective, Addison-Wesley Publishing Company, Reading, Mass., 1978.
- Knittle, Duane D. and Carr, Daniel M., "Detection and Avoidance of Contractor Defaults," U.S. Army Procurement Research Office, Fort Lee, Va., 1980.
- Lee, Lamar and Dobler, Donald W., Purchasing and Materials Management, McGraw-Hill Book Company, New York, 1977.
- Scott, Mitchell, Birnbaum Organization Theory: A Structural and Behavioral Analysis, Richard Irwin, Inc., Homewood, Ill., 1981.
- Sherman, Stanley N., Government Procurement Management, Woodcrafters Publications, Gaithersburg, MD., 1981.

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